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A Ten-Year Journey towards an Accountable and Sustainable Patient-Centred Care Model

Jose Miguel Aguilera OAM

RN, DAN, MNA, MCOM, FACN, AFACHSM, STTI

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Declaration of Originality

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Abstract

Background: The provision of an accountable and sustainable healthcare system is a major challenge worldwide. The delivery of a patient-centred care model that is accessible, safe, reliable and affordable remains elusive for many organisations. Over the past decade, St Vincent's Private Hospital Sydney has implemented three frameworks – the Balanced Scorecard, the Magnet Recognition Program® and a revenue cycle management program – to address this challenge and strive towards the delivery of an accountable and sustainable patient-centred care model.

Aim: The aim of this research was to analyse the financial, clinical and cultural impact of the three frameworks implemented at St Vincent's Private Hospital to improve its overall performance and sustainability towards and accountable and sustainable patient-centred care model.

Research Design: The research design adopted was a modified sequential, explanatory mixed-method organisational single-case study design. The quantitative component of the study consisted of a cost-benefit analysis of the past 10 years of the implementation of the Balanced Scorecard, the Magnet Recognition Program® and a prospective analysis of the implementation of a revenue cycle management program. The qualitative component of the research study comprised semi-structured interviews and focus groups to analyse the impact of these frameworks on the participants' roles and functions and linking their feedback with the findings of the quantitative component of the study.

Results: The overall findings suggest that the combined impact of these three frameworks may have assisted St Vincent's Private Hospital in its journey towards an accountable and sustainable patient-centred care model. The quantitative component of the study established that improved quality and safety outcomes, patient and staff experience, and greater efficiencies

and savings may have been realised through the individual as well as the combined implementation of these frameworks. The qualitative component of the study explained the varying degrees of understanding of these frameworks by the nursing staff, and how the frameworks may have assisted them in achieving improved performance. In terms of the level of support for the three programs from the nursing staff, the study indicated that the Magnet Recognition Program® received the highest level, which was quite significant. The Balanced Scorecard was second in the level of support received and the revenue cycle management program was third.

Conclusion: Analysis of the individual and cumulative impact of the Balanced Scorecard, the Magnet Recognition Program® and the revenue cycle management program, indicates that using these frameworks in combination may have assisted St Vincent's Private Hospital in improving its overall performance. In addition, the findings of this research advocate and support the incorporation of these three frameworks into a single, integrated patient-centred care model. However, further research is required to test this proposition empirically.

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Glossary

Accountable care: a concept for organising and delivering health care that strives for better care and incentive alignment to outcomes; increased proactive, preventative health care; access to the right care; and a better, more effective patient experience.

Assistant director of nursing (ADON): a senior nursing role that is responsible and accountable for the whole healthcare organisation during after-hours and at weekends. This role reports directly to the director of nursing.

Average length of stay (ALOS): refers to the average number of days that patients spend in hospital. It is generally measured by dividing the total number of days stayed by all inpatients during a year by the number of admissions or discharges. Day cases are excluded.

Balanced scorecard (BSC): is a strategic planning and management system which takes into account non-financial aspects of corporate performance, such as customer satisfaction and business processes, to create a complete picture of how the organisation is likely to perform in the future.

Benefit-cost ratio (BCR): is an indicator used in the formal discipline of cost-benefit analysis that attempts to summarise the overall value for money of a project or proposal.

Casemix Index (CMI): is a relative value assigned to a diagnosis-related group (DRG/MSDRG) of patients in a medical care environment. The CMI value is used in determining the allocation of resources to care for and/or treat the patients in the group.

Cost-benefit analysis (CBA): is a systematic process for calculating and comparing *benefits* and *costs* of a project, decision or government policy (hereafter, "project"). Broadly, cost-benefit analysis has two purposes: to determine if it is a sound investment/decision (justification/feasibility), and to provide a basis for comparing projects.

Earnings before interest, tax, depreciation, amortisation and rent (EBITDAR): earnings before interest, tax, depreciation, amortisation and rent is a non-generally accepted accounting practice metric that can be used to evaluate an organisation's financial performance.

Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS): is a survey instrument and data collection methodology for measuring patients' perceptions of their hospital experience.

Health facilities: are places that provide health care. They include hospitals, clinics, outpatient care centres, and specialised care centres such as birthing centres and psychiatric care centres.

Internal rate of return (IRR): is the interest rate at which the net present value of all the cash flows (both positive and negative) from a project or investment equal zero. Internal rate of return is used to evaluate the attractiveness of a project or investment.

Magnet Recognition Program® (MRP): Magnet Recognition® from the American Nurses Credentialing Centre (ANCC) is the highest and most prestigious distinction a healthcare organisation can receive for nursing excellence and high-quality patient care.

Magnet hospital: A hospital where nursing delivers excellent patient outcomes, where nurses have a high level of job satisfaction, and where there is a low staff nurse turnover.

Net promoter score: is an index ranging from -100 to 100 that measures the willingness of customers to recommend an organisation's products or services to others. It is used as a proxy for gauging the customer's overall satisfaction with an organisation's product or service and the customer's loyalty to the brand.

Not-for-profit hospital (NFP): is a hospital which is organised as a non-profit corporation. Usually, it was first established for a charitable purpose and was, and may still be, frequently affiliated with a religious denomination.

Nurse sensitive indicators (NSI): indicators that are relevant, based on nurses' scope and domain of practice, and for which there is empirical evidence linking nursing inputs and interventions to outcomes.

Nursing unit manager (NUM): NUMs oversee all aspects of operating a unit within a healthcare facility from supervising nursing staff to monitoring patient care.

Patient-centred care (PCC): The Institute of Medicine (IOM) defines patient-centred care as: "Providing care that is respectful of, and responsive to, individual patient preferences, needs and values, and ensuring that patient values guide all clinical decisions".

Relative stay index (RSI): summarises the length of stay for admitted patients, with adjustments for casemix (the types of patients treated and the types of treatments provided). It is regarded as an indicator of the efficiency of hospitals. It enables hospitals to determine how quickly they are discharging patients in relation to their peers whilst accounting for casemix complexity.

Return of investment (ROI)*:* is the most common profitability ratio. There are several ways to determine ROI, but the most frequently used method is to divide net profit by total assets.

Revenue per bed days (RPBD): refers to the average amount of revenue achieved per occupied bed day. It is calculated by dividing total revenue by the occupied number of bed days for the accounting period. It reflects the casemix of the patient load treated and cared for.

Chapter 1

Introduction

This chapter sets the scene and provides a context for why this organisational single-case study research was conducted. It also addresses the reason why I chose a professional doctorate rather than a PhD as well as the topic itself. The chapter provides a description of St Vincent's Private Hospital Sydney (the Hospital) from an historical perspective and describes the broad range of services that the Hospital provides, its governance structures and the catchment population that it serves. The chapter also highlights the clinical programs offered, the current accreditation status, and the structure and governance of the Nursing Directorate. It includes a synopsis of the introduction of three frameworks: the Balanced Scorecard, the Magnet Recognition Program® and a revenue cycle management program as nursing-led initiatives.

This chapter also describes the background, purpose and overview of the study, as well as outlining the structure of the thesis and describing the organisation of forthcoming chapters.

Background

Achieving an accountable and sustainable patient-centred care model that is accessible, safe, reliable and affordable, and focuses on meeting patients' needs and preferences has been and remains an aspiration and vision of St Vincent's Private Hospital Sydney (SVPHS, the Hospital). The inability to achieve this outcome, as a values-based healthcare reform, poses a major threat to the integrity and capacity of healthcare systems all over the world (Robinson, Callister, Berry, & Dearing, 2008). The challenge is in meeting the ever-increasing healthcare requirements, needs and expectations of our ageing and growing population who have chronic and complex conditions (Porter, 2009).

Australia, like most healthcare providers worldwide, is faced with these challenges as a result of population and workforce ageing, chronicity of diseases, cost of technology and waste of resources to mention just a few (Grigg & Mann, 2008; Kaplan, 2008).

To achieve patient-centred care, organisations need to be able to provide adequate access and appropriate levels of care, as well as quality and safety in the delivery of care. Organisations are also required to improve efficiency and productivity, whilst remaining sustainable and financially viable at the same time. These challenges occur amidst an increase in competition and financial pressure to do more with less and to meet the demands and heightened level of community expectations.

This imperative is highlighted by the example of St Vincent's Private Hospital in Manhattan, New York, which became insolvent and ceased to operate in 2010 (Clarke, 2010; Otterman, 2010). This hospital sustained annual deficits in its operating and capital budgets for a number of years and was unable to improve its financial performance, which led to its closure. This occurred despite its outstanding history of service to its local community for more than 161 years (Levine, 2010). This example illustrates the necessity of not only ensuring the provision of high standards of quality and safety but also the critical requirement of ensuring financial viability and long-term sustainability. As it has been said, "no margin, no mission "(Drenkard, 2010a; Meliones, Ballard, Liekweg, & Burton, 2001).

St Vincent's Private Hospital Sydney is not immune to the prevailing healthcare challenges and financial pressures, and there is currently a further pressing need to achieve greater efficiencies, improve productivity and profitability in order to undertake the much-needed redevelopment of its ageing infrastructure.

The aim of this study is to analyse the financial, clinical and cultural impact of the following three frameworks implemented at the Hospital to improve its overall performance and sustainability, towards an accountable and sustainable patient-centred care model.

The Balanced Scorecard

The Balanced Scorecard (BSC), implemented in 2005, is a widely used strategic planning and management system that can assist organisations in increasing accountability as well as achieving long-term performance improvement. It also serves as a communication tool for the whole organisation (Kaplan & Norton, 1992). The Balanced Scorecard incorporates both financial and non-financial indicators, enabling leaders and managers to have a fast and comprehensive view of the organisation.

Magnet Recognition Program®

The Magnet Recognition Program® (MRP), implemented in 2011, is rhetorically referred to as the "gold standard" in nursing excellence (Drenkard, 2010b). The program provides a framework for organisations to develop a culture that strengthens nurses' autonomy and control of their practice, as well as creating a practice environment that supports the professional development of nurses, which leads to improved patient care outcomes (Kramer, Maguire, & Brewer, 2011; Smith, 2014; Walker, Fitzgerald, & Duff, 2014).

Revenue cycle management (RCM) program

The revenue cycle management (RCM) program, implemented in 2014, is critical for the financial viability and success of healthcare facilities (Rauscher, 2010). Revenue cycle management means taking steps to assure that organisations get paid for what they do and that they get paid in a timely fashion (Nelson, 2011). A streamlined and efficient revenue cycle management is the cornerstone of a successful healthcare organisation (Fahrenholz, 2010).

This 10-year longitudinal study (2005–15) overlapped with the global financial crisis of 2007–09, which imposed additional financial pressures on healthcare systems worldwide (Chang, Stuckler, Yip, & Gunnell, 2013).

The Candidate

I am currently the Director of Nursing and Clinical Services at St Vincent's Private Hospital Sydney, a position that I have held for the past 12 years and, prior to this role, I was the Deputy Director of Nursing for 11 years. My healthcare experience has been in both the public and private hospital sectors (clinical and administrative) and spans a period of 40 years. I hold qualifications and experience in health administration, accounting, finance and commerce.

My team and I inherited a highly performing hospital with an excellent reputation. Our philosophical commitment to a continuous quality improvement agenda challenged us to search for opportunities and possibilities to enhance the work undertaken by our predecessors. The Hospital's commitment to a patient-centred care model is demonstrated by the comprehensive provision of all clinical specialties, with the exception of paediatrics and obstetrics, and is proving to be successful as indicated by the following results: an 87% patient satisfaction with nursing, Press Ganey patient satisfaction survey 2004; a culture of ambition with a 45% staff engagement rate, Best Practice Australia, staff survey (BPA, 2004); a less than 1% infection rate; 0.28% patient falls rate; and a 0.07% hospital-acquired pressure ulcers rate. All of these results were favourable when compared to figures in the Australian national benchmarking database of the Australian Council on Health Care Standards (ACHS, 2004).

Since the late 1990s, I had advocated for the adoption of performance improvement frameworks, which included the Magnet Recognition Program® and the Balanced Scorecard,

within the Hospital, but I was not able to garner sufficient support from the existing leadership at the time for the programs' introduction. In 2004, I was appointed Director of Nursing and began to explore the possibility of adopting such performance improvement frameworks, with the aim of increasing quality and safety, efficiency, accountability and overall performance.

The Balanced Scorecard (Kaplan & Norton, 1996c), a strategic planning and management system that can assist organisations in increasing accountability as well as achieving long-term performance improvements, was introduced, and by 2005, was embedded within all the clinical units at the Hospital.

In 2009, which was the Hospital's centenary year, we embarked on the Magnet journey. We considered the Magnet Recognition Program® to be well aligned with the Hospital's value of excellence as well as being a strong fit with our strategic plan, vision and mission. However, prior to 2009, the Hospital was not eligible in terms of the Magnet Recognition Program® qualification requirements, and, equally, was not ready or prepared to meet the programs' qualifying prerequisites. In 2011, the Hospital became the first Magnet-designated private hospital in Australia.

One of the key requirements of the Magnet Recognition Program® is to have a substantial research capacity within the organisation to drive evidence-based improvements in patient-focused outcomes of care. Armed with a commitment to increase capacity and mobilise management research within the Hospital, we established a chair of nursing in applied research with a partner university and launched the Nursing Research Institute in 2007. In 2013, we established further conjoint positions with another partner university and appointed a professor of healthcare improvement as well as a senior research fellow and several PhD-trained collaborators. These appointments led to the establishment of the Centre for Healthcare Improvement.

In 2014, led by the Nursing Directorate, the Hospital commenced a revenue cycle management enhancement program to meet the challenges of achieving improved sustainability, greater prosperity and growth (Lundmark, 2014; Terrell, 2013).

The Balanced Scorecard and the Magnet Recognition Program® were the subject of significant controversy and opposition from a number of senior colleagues within the Nursing Directorate. They argued that these frameworks were not easily adaptable to the Australian context, were too "American", and were possibly not entirely appropriate for the healthcare system. The Hospital risked alienating some of the senior staff by pursuing the introduction of these programs, and it took several months of robust conversations, education, exploration and discussion of these and other potential options before the nursing leadership team was agreeable to endorsing these frameworks. The risk of not embracing performance improvements frameworks was seen by the nurse executive as potentially denying an opportunity for the Nursing Directorate and the Hospital to strengthen the organisation's quality and safety agenda, sustainability and future prosperity.

Once this hurdle had been conquered, the Executive Director and Chief Executive Officer were briefed and exhorted to support these initiatives. It should be noted that without their sponsorship, the introduction of these frameworks would not have been possible.

Following these necessary steps, a more considered change management strategy and plan was designed and implemented throughout the Nursing Directorate to enlist the broader and essential support of the nursing workforce. These included numerous education sessions and presentations across the entire Hospital explaining "the what, the why and the how" of implementing these initiatives.

Needless to say, these sessions generated considerable discussion amongst the nursing workforce and, interestingly, all over the Hospital, including doctors, and other clinical services, as well as the non-clinical support services. There was a varying degree of initial support, but it grew significantly over the years to the point where the value proposition of these initiatives became strongly embraced.

Given that 10 years had elapsed since the introduction of the Balanced Scorecard at the Hospital; four years since the Magnet Recognition and one year since the adoption of the revenue cycle management program, an evaluation of these three frameworks was in order to determine their impact in assisting the Hospital to achieve its commitment of delivering an accountable and sustainable patient-centred care model.

My motivation to conduct the study was high as no studies had been undertaken to examine the combined impact of these three frameworks in assisting organisations attempting to improve quality and safety as well as strengthening accountability and enhancing long-term sustainability.

In 2013, the Hospital research team and I negotiated the establishment of a professional doctorate with one of our partner universities, with the single purpose of further mobilising management research within the Hospital. The Doctorate of Health program commenced in 2014, with five senior nurse managers and leaders (including me) enrolled in the program at the Hospital. In 2016, there are nine senior nurses undertaking the Doctorate of Health program and another five are PhD candidates.

I chose to undertake a professional doctorate, given the nature of such a doctorate, that focuses on work-related challenges and the impact that these may have on the chosen field of study (Scott, Brown, & Lunt, 2004); in this case, the healthcare industry. Most importantly, having

negotiated the professional doctorate, I was committed to its success and wanted to lead by example in an attempt to encourage other individuals to follow suit. Dopson et al. (2015) stated that "knowledge leadership involves authentic, effortful and often deeply personal engagement in mobilising knowledge into practice" (p. 3). These authors also argued that managers could strive to become the "knowledge object" by advancing knowledge leadership and mobilising management research within the organisation.

Professional doctorates aim at learning the skills of a practitioner scholar; balancing critical thinking and looking at the problem of practice rather than the problem of theory (Neumann, 2005). A doctorate program also aims at collaborating across professional cultures and boundaries to foster development and innovation and to make a difference.

The chosen topic of a professional doctorate needs to be in line with the candidate's role and the strategic direction of the organisation (Bourner, Bowden, & Laing, 2001). My aim in undertaking a professional doctorate is not to become a "professional researcher", but rather work further towards developing the skills of a "researching professional" (Walker, Campbell, Duff, & Cummings, 2016; Bourner et al., 2001).

Given my duties as an executive healthcare leader, I had never contemplated undertaking a PhD as I felt that my role was not an academic one; however, if my circumstances had been different, I am sure I would have chosen to start a PhD earlier in my professional career.

St Vincent's Private Hospital, Sydney

The Hospital was established by the Sisters of Charity in 1909 and enjoys an enviable reputation in the healthcare industry as a result of its 107 years of commitment to delivering high standards of compassionate medical and nursing care to its patients.

The Hospital's vision is to be recognised nationally and internationally as a leading site of excellence in outstanding and compassionate patient-centred care.

It is a not-for-profit, Catholic, teaching tertiary referral, elective surgical facility with a broad and complex casemix that also performs a significant amount of "pro-bono" clinical work as part of its social accountability/contribution commitment and program.

As well, the Hospital partly funds the St Vincent's Clinic Outreach service, which caters for the poor, disadvantaged and marginalised in our community.

The fulfilment of its mission, the healing ministry, is not an option. It is the only reason for the Hospital's existence. The Hospital's journey towards an accountable and sustainable patient-centred care model is at the heart of this study.

The Hospital, however, is not immune to the prevailing financial pressures, and there is a pressing need to achieve greater efficiencies, improve productivity and profitability in order to undertake the much-needed redevelopment of its ageing infrastructure.

The Hospital provides services for all specialties with the exception of paediatrics and obstetrics. In 2012, the Hospital commenced the provision of young adult mental health care, a service relatively unique within the private hospital system.

The Hospital is particularly well known for its cardiac and cardiothoracic program, as it was the first private hospital in Australia to undertake open heart surgery (Cooke, 2009).

The Hospital has a casemix index of 1.8, (based on the Australian National Private Hospitals Cost data Collection, round 13), which is 80% more complex than the casemix of the average public or private Australian hospital (Bazos, 2016). St Vincent's Private Hospital Sydney strives to differentiate itself from other private healthcare facilities by what it does in terms of

the broader range and more complex services it provides; it chooses to embrace and provide a comprehensive range of services as an expression of its mission and vision; and it adopts and leads the implementation of new technologies and treatment modalities (Cooke, 2009).

Whilst the concept of patient-centred care has gained an increased profile in recent times within the healthcare sector, the Hospital has emphasised the importance of the whole person for over a century and it could be argued that the Sisters of Charity lived patient-centred care on a daily basis through their efforts to meet not only the physical but also the spiritual and holistic needs and preferences of the patients entrusted to their care – a mission, vision and commitment that continues to be a priority today and will be into the future (Cooke, 2009).

The Hospital has an occupancy and utilisation rate of 80–85% for its beds and theatres, which is not surprising given the complexity of the health needs of the patients that the Hospital treats, cares for and serves. The Hospital undertakes tertiary and quaternary referrals and is recognised as an associated teaching hospital of the University of New South Wales (Cooke, 2009).

The Hospital has pioneered over the years many new technologies and medical treatments. For example, the Hospital established the first level 1 intensive care unit and conducted the first open-heart surgery in a private hospital in Australia; it also acquired the first DaVinci robot in NSW in 2006 (robotically assisted minimally invasive surgery), which has since performed in excess of 3700 surgical cases (Cooke, 2009).

In 2014, the Hospital conducted the first live-donor renal transplant in the NSW private setting, thereby easing the healthcare burden for patients on the waiting list for renal transplantation.

The Sisters of Charity established St Vincent's Clinic and led the Australian trend of having a collocated doctors' clinic servicing both the public and private hospital sectors. The Hospital has an engaged culture, which is defined as a culture of "success", which has been built on and

strengthened over many years. With a 66% rating for staff engagement and 77% of the staff stating that the Hospital is "a truly great place to work", the Hospital compares favourably with the benchmarked results for both private and public hospitals (BPA, 2013).

The Hospital strives to differentiate itself from its competitors through its focus on patient satisfaction and experience, achieving scores in the 96–99 percentile and a net promoter score (a measure of organisational loyalty, with any score above 50 considered excellent) of 72–84.7 (Press Ganey, 2015).

The Hospital has been accredited through the Australian Council on Healthcare Standards since 1981, and has consistently received "excellent achievement and many outstanding achievement" ratings. In 2015, the Hospital was awarded the Australian Council on Healthcare Standards' inaugural group gold medal in recognition of its high standards of safety and quality over the past decade.

The Hospital became the first private hospital in the southern hemisphere to become a Magnet Recognised hospital. Magnet Recognition is considered by the American Nurses Credentialing Centre (ANCC) to be the "gold standard" award for quality hospitals in the world, and after 30 years since its inception, fewer than 8% (or 426) of all US hospitals have been able to achieve Magnet Recognition. However, it must be borne in mind that not all US hospitals would have been eligible to receive Magnet Recognition.

The Nursing and Clinical Services Directorate is led and managed through a shared governance model within a values-based approach to leadership. The shared governance is composed of six practice councils: the Nursing Executive Council; the Clinical Management Council; the Nursing Quality and Safety Council; the Nursing Education Training and Development

Council; the Clinical Policy and Procedure Council; and the Practice Development and Research Council.

This model encourages a learning environment and a shared sense of purpose among the staff. The Director of Nursing and Clinical Services fosters and promotes communication across different professional disciplines and plays a key role in maintaining collaborative relationships with the doctors that are accredited to the Hospital and work in a consultative capacity.

Over the past 10 years, three key initiatives that warrant special mention are the introduction of the Balanced Scorecard in 2005, the Magnet Recognition Program® in 2011 and a revenue cycle management program in 2014. The main purpose for their introduction was to improve performance and accountability using the Balanced Scorecard, enhance the practice environment and clinical excellence with the Magnet Recognition Program®, and improve the financial performance of the Hospital using the revenue cycle management program. These three programs are briefly described below and will be explored in detail in the literature review chapter.

The Balanced Scorecard

The Balanced Scorecard is a widely used strategic management tool that enables organisations to increase performance, accountability and strategy execution (Hoque, 2014). Gaining endorsement from the Hospital's senior nurses and key stakeholders was a significant challenge to its adoption and implementation, as mentioned earlier, and the opposition to it was considered a major barrier to its successful implementation (Chan, 2006; Hoque, 2014; Rodgers, 2011).

The Balanced Scorecard was introduced to the Nursing Directorate at the Hospital in 2005 with the aim of improving clinical governance through enhanced systems and processes that would

lead to greater accountability and performance. A three-year strategic plan, for the years between 2005 and 2008, was developed and became the central planning tool that underpinned the operations of all the clinical units. A strategy map was developed highlighting clear objectives within the four perspectives of the Balanced Scorecard, namely, the customer perspective; the internal process perspective; the learning, growth and innovation perspective; and the financial perspective. Once the objectives were determined, the strategy map assisted in developing clear measures, targets and initiatives, and then assigning who the accountable individuals would be for ensuring these objectives were achieved.

Subsequently, specialty based plans were developed by the specific clinical units in line with the overall Nursing Directorate Balanced Scorecard plan. Individual units' targets and initiatives were developed in consultation with nursing unit managers and their staff, and these were linked to their annual performance reviews. The Balanced Scorecard was then automated through a consultancy firm who provided a suitable software product enabling all staff to have access to the Balanced Scorecard results at any time. Data entry was outsourced through the information technology department so that nursing unit managers did not have to spend time away from their respective key leadership priorities. Funding to introduce the Balanced Scorecard was provided by the Hospital through its commitment to enhance processes and systems in order to achieve greater accountability, overall operational performance, and improved patient-centred care outcomes.

Why did we choose the Balanced Scorecard?

Since the late 1990s, the balanced scorecard had been gaining recognition and popularity in the business world and to a lesser degree in the healthcare industry (Hoque, 2014). In 2004, upon my appointment as Director of Nursing, and in consultation with the then Executive Director and the Nursing Executive team, a decision to explore the possibility of embracing a

performance improvement framework throughout the Nursing Directorate was made. In choosing a framework, the Hospital conducted an evaluation of Lean Thinking (Freire & Alarcón, 2002), Six Sigma and Lean Six Sigma (Nave, 2002), and Performance Prism (Neely & Adams, 2000), as well as the Balanced Scorecard (Kaplan & Norton, 1992). All of these performance improvement frameworks were considered as alternatives to the Balanced Scorecard (Neely, Adams, & Kennerley, 2002). The decision to adopt the Balanced Scorecard was made on the basis that this framework was able to provide a comprehensive approach to derive the strategy, set objectives, key performance indicators, targets, initiatives and accountabilities suitable for the Hospital. Following this decision, I undertook an intensive Balanced Scorecard training program and became a Balanced Scorecard certified practitioner and joined the Palladium's Balanced Scorecard Collaborative. Prior to its implementation, an extensive training program throughout the nursing directorate to facilitate the implementation process was conducted.

Magnet Recognition Program®

The Magnet Recognition Program® is rhetorically referred to as the "gold standard" in nursing excellence (Drenkard, 2010b). In line with its value of excellence, the nursing leadership at the Hospital embraced the Magnet Recognition Program® in 2007 and officially began its journey towards Magnet designation in 2009. Prior to 2009, the Hospital was neither eligible, prepared nor ready to meet the prerequisites to apply for designation. In mid-2009, the Hospital adopted the practice environment scale (PES-AUS) survey, the Australian adapted tool (Middleton, Griffiths, Fernandez, & Smith, 2008). PES-AUS survey was conducted for the purpose of assessing the level of preparedness and readiness of the Hospital to undertake the Magnet journey. The results of these surveys demonstrated the level of engagement of nurses (as a

'Magnet like' facility) that reflected a healthy practice environment that existed at the hospital at that time (Appendix G, p. 295). In May 2011, the Hospital was designated as a Magnet hospital. The inspiration for this journey was based on the prevailing leadership wishing to continually improve on an already-successful and high-performing hospital. The lack of a robust nursing accreditation system, unlike the National Association of Testing Authorities, Australia, the Hazard Analysis Critical Control Points and the Pharmacy Guild of Australia's Quality Care Pharmacy program, compelled the nursing leadership to submit the nursing service to the highest level of international scrutiny and be recognised as one of the most highly performing nursing services in the world. The Magnet Recognition Program® was seen as a vehicle that would complement the Balanced Scorecard framework to further develop the practice environment, achieve higher levels of nursing autonomy and engagement, and, most importantly, enhance patient safety, quality standards and patient experience.

Why did we choose the Magnet Recognition Program®?

Magnet recognition has been an aspiration of the Hospital since the mid-1990s. However, the Hospital was not eligible to apply at that time; nor was it prepared or ready to undertake the journey. Magnet was, and is, the only evidence-based international nursing excellence program available (Aiken, Clarke, & Sloane, 2008), and it was the obvious choice for the Hospital seeking to embrace a nursing excellence improvement framework.

In 2008, the Hospital considered the StuderGroup's "Hardwiring Excellence" program (Studer, 2003), as well as the Baldrige's Excellence Framework for healthcare (Brown, 2013), with a view to enhancing the performance improvement program that had already commenced with the Balanced Scorecard in 2005 (Vokurka, 2004).

A decision to embark on the Magnet Recognition Program® was made following a study tour of Magnet hospitals, which included the Princess Alexandra Hospital in Brisbane, Australia, and several US Magnet hospitals. As part of the Magnet journey, the Hospital has implemented a shared governance framework to improve shared decision-making, autonomy and leadership.

A professional practice model and care delivery system was developed to generate reflective and exemplary professional practice, and practice development and research was established throughout the clinical units to undertake, promote and disseminate best practices.

Revenue Cycle Management Program

Revenue cycle management is critical for the financial viability and success of healthcare facilities and most struggle to get it right (Rauscher, 2010). Nine years after the introduction of the Balanced Scorecard and three years since receiving Magnet Recognition, the Hospital introduced another framework to further enhance its business model and assist the hospital in its journey towards an accountable and sustainable patient-centred care model.

The revenue cycle management program was designed to focus on three major areas that required further enhancement at the Hospital, namely, length of stay management, documentation and revenue optimisation.

Despite the introduction of the Balanced Scorecard in 2005 and the Magnet Recognition Program® in 2011, there was a challenge to improve the Hospital's business model, with an imperative to address revenue optimisation from a clinical perspective. There needed to be a focus on achieving an appropriate length of stay for very complex patients being admitted with multiple co-morbidities and acute on chronic conditions. Equally, there was a significant gap in medical documentation describing these complexities, which resulted in inadequate coding

of patients' medical records. This inadequacy often led to the Hospital under-coding the severity of the inpatient episode of care and consequently receiving an incorrect reimbursement from the private health insurance funds for the actual care provided. In addition, significant leakages of revenue were experienced by the Hospital as a result of not always capturing the total quantity of prosthetics and medical and surgical supplies used during patients' admissions.

The Hospital aims to offer high standards of patient care and safety and to be continually innovative in its processes and systems to achieve greater accountability, overall performance improvement and long-term sustainability. Equally, the Hospital endeavours to attract and retain the highest calibre of doctors, nurses and allied-health clinicians. The Hospital also aims to provide a value proposition for staff, doctors, insurers and patients through its commitment to provide a comprehensive range of tertiary and quaternary services that are not always available in private hospitals. This is due to the fact that these services are usually the exclusive domain of acute tertiary public healthcare facilities.

St Vincent's Private Hospital Sydney also provides professional development opportunities for staff, ensuring the organisation positions itself at the forefront of healthcare practice and research.

In summary, the evaluation of these three frameworks is undertaken to determine their impact on assisting the Hospital in its pursuit of an accountable and sustainable patient-centred care model.

Structure of the Thesis

The thesis consists of the following seven chapters:

Chapter 1 – Introduction

Chapter 2 – Literature review

This chapter explores the last 20 years of literature related to the Balanced Scorecard, the Magnet Recognition Program® and the revenue cycle management program and its application to SVPH and health care more broadly. The focus is on reviewing the impact of these frameworks in assisting the Hospital and other healthcare organisations to improve quality and safety, patient satisfaction and staff experience as well as achieving financial viability and long-term sustainability.

Chapter 3 – Research design and methods

This chapter describes how the study was conducted, the methods used to collect and analyse the data, and the mechanisms used to ensure the minimisation of bias. In this chapter, ethical considerations are taken into account to protect the privacy of research participants.

Chapter 4 – Quantitative component

This chapter outlines the quantitative findings relating to the past 10 years since the implementation of the Balanced Scorecard, the Magnet Recognition Program® and the recently implemented revenue cycle management program at the Hospital. This is represented in the form of a cost-benefit analysis, examining the impact of these frameworks on the performance of the Hospital in the areas of quality and safety, patient and staff satisfaction, as well as financial performance and long-term sustainability.

Chapter 5 –Qualitative component

This chapter outlines the qualitative, interpretative and descriptive findings related to the past ten years since the implementation of the Balanced Scorecard, the Magnet Recognition Program® and the recently implemented revenue cycle management program at the Hospital.

It describes the cultural impact that these frameworks have had on human and social capital, and reflects on the practice environment and the level of engagement of patients and staff.

Chapter 6 – Discussion

This chapter includes a discussion of the key issues that have emerged from the cost-benefit analyse and their implications for both the Hospital and for other healthcare organisations striving to achieve greater accountability, overall improved performance and long-term sustainability. It also explores the intangibles of achieving greater patient and staff engagement and loyalty through the implementation of these frameworks.

Chapter 7 – Conclusion

This chapter outlines the contribution that this study has made to the existing body of knowledge regarding how these frameworks assist healthcare organisations to achieve quality and safety, productivity, accountability, efficiency and long-term sustainability. It is expected that the dissemination of the study findings may contribute to the professional development of clinicians, managers and leaders striving for greater accountability and sustainability.

The chapter also discusses the strengths and limitations of the study, the relationship of the findings to the literature, and the implications for future practice, as well as providing recommendations for further research.

The concept of patient-centred care and how it may be strengthened by adopting the Balanced Scorecard, the Magnet Recognition Program®, and a revenue cycle management program is explored in the next chapter.

Chapter 2

Literature Review

Abstract

Objective/background

The provision of an accountable and sustainable healthcare system is a major challenge worldwide. The delivery of a patient-centred care model remains elusive for many organisations. There is a need to review the available literature and evidence to develop and implement an accountable and sustainable patient-centred care model to meet today's and the future's healthcare challenges.

Aim

To explore the concept of patient-centred care and the past 20 years' worth of literature related to the Balanced Scorecard, the Magnet Recognition Program® and the revenue cycle management program and their application to healthcare organisations. The focus is on reviewing the impact of these frameworks in assisting healthcare organisations to improve quality and safety, patient satisfaction and staff experience as well as achieving financial viability and long-term sustainability.

Design

Integrative literature review.

Data sources and analysis

Six electronic databases (1999–2014). CINAHL, Pubmed/Medline, Health Business Elite, Scopus, and UTAS. The search yielded 718 hits, 242 titles and abstracts were screened, 159

were retrieved and 63 articles were included. Donabedian's structure process and outcomes model was the main underlying conceptual framework for this review.

Results

While there are numerous studies examining the value and impact of patient-centred care using either the Balanced Scorecard, the Magnet Recognition Program® or the revenue cycle management program, there is none examining the combined value and impact of all three frameworks. The benefits revealed in this literature review are positive as all of these frameworks point to improvements in quality and safety, and patient satisfaction and experience, with a corresponding decrease in costs.

Conclusion

This review of the available literature suggests that the Balanced Scorecard may assist organisations from a strategic management system; the Magnet Recognition Program® from a nursing and clinical perspective; and a revenue cycle management program from a financial and business model perspective. The utilisation of these frameworks in combination may assist organisations striving to achieve an accountable and sustainable patient-centred care model. However, further research is required to empirically test this proposition.

Introduction

> Patient-centred care is an awful word. It is the best way of turning off health professionals. We should come up with a better term. No one has done it yet, however, so we are stuck with it. Everyone thinks they are patient centred, and everyone takes umbrage when it is suggested that they aren't. (Delbanco, 1995, p. 634)

If Delbanco (1995) is indeed right in his comments above, then clearly it matters to the world of health care that we continue to grapple with what patient-centred care is and what it is not. Indeed to achieve an accountable and sustainable patient-centred care model, organisations may

require the adoption of a number of systems and processes to assist them in achieving this aim. The Hospital adopted the Balanced Scorecard, the Magnet Recognition Program® and a revenue cycle management program to facilitate its journey.

The origin of the concept of patient-centred care dates back to the ancient Greek school of Cos, the holism of Jan Smuts and the writings of Hippocrates (Ellis, 1994). Patient-centred care is also founded on the research of Carl Rogers from the 1940s (Ellis, Ellis, & Corle, 1994). In our current healthcare systems, often the focus is on disease management or "illness-centred medicine", which follows guidelines or expert opinions, rather than "patient-centred medicine", which focuses on meeting patients' needs and desires as well as personal preferences (Burkman, 2012). Whilst the concept of patient-centred care is rare in the empirical literature (Finset, 2011), the concept is widely used across most healthcare systems around the world (McCormack & McCance, 2006; Pelzang, 2010). Despite its increased popularity, healthcare facilities struggle with its implementation due to the lack of a clear definition and method of measurement (Pelzang, 2010; Robinson et al., 2008).

This review explores three performance improvement frameworks to ascertain their utility towards improving patient-centred care. The first one is the Balanced Scorecard, which is designed to facilitate strategy execution, greater organisational performance and accountability. This framework was developed by Harvard Business School professors, Kaplan and Norton, in 1992 (Kaplan & Norton, 1992). The development of the Balanced Scorecard was seen by the business community as a much-needed framework to replace the traditional management system of utilising budgets, accounting and financial measures to gauge an organisation's performance. This conventional method (budgets and accounting) had actually hindered organisations in achieving growth and success (Voelker, Rakich, & French, 2001). Financial measures are lag indicators, focusing and reporting on past performance, and do not assist organisations in predicting future financial performance.

From a clinical excellence perspective, the second framework reviewed – the Magnet Recognition Program® – aims to improve the practice environment and patient clinical outcomes. The genesis of today's Magnet Recognition Program® dates back to 1983 when the American Academy of Nursing Task Force on Nursing Practice in Hospitals conducted a study to identify the characteristics of existing hospitals that demonstrated higher nursing staff retention and lower turnover rates. The study found that 41 out of 163 hospitals attracted and retained their nurses and were described as "magnet" hospitals (McClure, 2005). The characteristics that distinguished these hospitals became known as the "forces of magnetism".

In 1997, the American Nurses Credentialing Centre began to conduct the "Magnet Nursing Services Recognition Program". In 2000, the Magnet program expanded to recognise healthcare organisations outside the USA, and in 2002 the program was officially changed to the Magnet Recognition Program® (ANCC, 2010).

From a financial viability and sustainability perspective, a revenue cycle management framework is reviewed to ascertain its impact on achieving improved patient-centred care. Most of the revenue generated by private hospitals is derived from the provision of patient care. Therefore, an effective revenue cycle management program is critical to the financial viability and sustainability of hospitals in an ever-increasing and challenging financial environment (Rauscher Singh & Wheeler, 2012). Glaser (2013) argued that "it will not be possible for organisations to manage care in an era that rewards those that provide high-quality and efficient care without the ability to analyse integrated care quality, cost and reimbursement data" (p. 1).

Aim

The aim is to explore the concept of patient-centred care and the past 20 years' worth of literature related to the Balanced Scorecard, the Magnet Recognition Program® and the revenue cycle management program and their application to healthcare organisations. The focus is on

reviewing the impact of these frameworks in assisting healthcare organisations to improve quality and safety, patient satisfaction and staff experience as well as achieving financial viability and long-term sustainability. I chose an integrative review because when the literature is dispersed across a wide range of sources, and is of variable quality (with not much primary research), an integrative review allows for a broader and more inclusive search.

This integrative literature review aimed at examining the available literature to answer the following questions:

"What are the benefits, challenges and opportunities of the Balanced Scorecard, the Magnet Recognition Program® and a revenue cycle management program?"

and

"How do or can these frameworks assist healthcare organisations in achieving an accountable and sustainable patient-centred care model?"

Methods

The integrative review synthesises findings from a wide range of primary and secondary research studies and was guided by the Whittemore and Knafl (2005) method. This method aims at enhancing the rigour of data analysis and synthesis, potentially enabling findings from diverse methodologies to be applied to clinical practice, healthcare and policy.

Search Strategy

The primary search strategy included the following health and medical databases: CINAHL, Pubmed/Medline, Health Business Elite, Scopus and University of Tasmania databases.

The database searches were limited to results in English and Spanish in peer-reviewed journals published between January 1999 and November 2014. In addition, searches of "grey" literature,

hand searching and "snowballing", using references in relevant articles and studies, were undertaken.

The following subject headings/keywords in related articles, journals and databases were used as a source of search terms. Search terms included Magnet hospitals, health care, hospitals, health facilities, sustainability, profitability, accountability, efficiency, financial management, revenue, costs, economics, quality, growth, non-profit, accountable care, balanced score card, and nurse sensitive indicators (see Appendix A, p. 255). After the initial search, additional key words that emerged from the reviewed relevant articles were pursued.

Selection criteria/inclusion criteria:

Studies were selected if they covered the topics of patient-centred care, Balanced Scorecard, the Magnet Recognition Program®, revenue cycle management, accountability in health care, efficiency, performance improvement, and/or costs of healthcare provision, sustainability, profitability, prosperity and growth.

The studies needed to describe the methodology, metrics and datasets used to determine hospitals' efficiency, performance improvement, cost of healthcare provision; sustainability; profitability, or prosperity and growth; and/or they needed to provide an empirical, conceptual and or theoretical basis for their findings.

Selection Process

The titles and abstracts of identified studies were screened for relevance. The full paper was obtained for relevant studies or in the case where the title and abstract provided insufficient details.

Study quality assessment checklists and procedures

Table 1 details the quality assessment checklist used to evaluate the primary studies. The checklist was adapted from those compiled by Kitchenham (2004).

Table 1

Quality Assessment Checklist

No.	Question	Answer
1	Are the research aims clearly specified?	Yes (1) No (0) Partially (0.5)
2	Was the study designed to achieve these aims?	Yes (1) No (0) Partially (0.5)
3	Are the data collection methods adequately detailed?	Yes (1) No (0) Partially (0.5)
4	Are the study findings credible?	Yes (1) No (0) Partially (0.5)
5	Are negative results (if any) presented?	Yes (1) No (0) Partially (0.5)
6	Do the researchers discuss any problems with the validity/reliability of their results?	Yes (1) No (0) Partially (0.5)

Data extraction and analysis

A modified Whittemore and Knafl (2005) method was used, which consisted of problem identification, literature search, data evaluation, data analysis and presentation. Data was extracted from a variety of conceptual, theoretical and descriptive reports as well as from qualitative, evaluative, mixed-method reviews and organisational case studies. Data analysis comprised the stages of reduction, display, comparison, conclusion drawing and verification. Concept matrices were developed to display the coded data (author, title, source, method, argument, issues approach and contribution to field) and to present a synthesis outlining the process of data integration.

Findings

The initial search strategy resulted in 718 articles.

The titles and abstracts (when available) of the references were used to make an initial assessment for relevance using the inclusion and exclusion criteria. The screening process yielded 233 articles of which 159 were retrieved. The data extraction process was carried out after identifying the final 63 articles. Data was extracted and analysed from relevant papers using predefined evidence summary templates or concept matrices attached to appendices B–E, pp. 257–286 (Daley et al., 2010). These concept matrices have been included as appendices with the intent to facilitate the flow of information for the reader.

Patient-centred care

The concept of patient-centred care is well known within the healthcare industry throughout the world. Most healthcare facilities aim at enhancing patient-centred care and often struggle with its implementation and measurement. Unhelpfully, there are many variants on the term, including, but not limited to: person-centred care (McCormack & McCance, 2006), family- and patient-centred care (Lawrence & Kinn, 2012) and relationship-centred care (Zolnierek, 2014). For consistency's sake, I will use patient-centred care as this is the nomenclature currently used by the Hospital.

Healthcare bureaucrats, funders, leaders, managers and clinicians need to make the necessary links between enhancing productivity, efficiency and sustainability in their attempts to achieve a patient-centred care model that is accessible and affordable.

Table B1 in Appendix B (p. 257) contains a concept matrix of the 15 studies reviewed in relation to patient-centred care.

This section of the literature review explores the current understanding of what patient-centred care is; what are its benefits; what are the challenges and opportunities to achieve it; how it can be implemented; and what constitutes an accountable and sustainable patient-centred care model. This is referred to in Table B2 in Appendix B (p. 263).

Clark (2006) conducted a scoping review of patient-centred care approaches in healthcare and found no unifying patient-centred care framework or model. However, all the identified approaches included strategies to achieve health promotion, partnerships and effective communication.

Patient-centred care is described as caring for the patient as an individual (Redman, 2004, as cited in Pelzang, 2010, p.11). Patient-centred care is also referred to as focusing the care on meeting patients' needs and preferences (Luxford, Delbanco, & Safran, 2011; Thórarinsdóttir & Kristjánsson, 2014).

Patient-centred care is defined by Ellis (1999) as an alternative to the mechanistic and traditional model of care that focuses on the organisation and its care providers rather than on the needs, preferences and requirements of the whole person seeking heath care.

Throughout the literature, involving patients in decision-making and providing individualised and holistic care are the key features of patient-centredness (McCormack, Karlsson, Dewing, & Lerdal, 2010; Robinson et al., 2008). The emphasis is on the whole person – which includes the mind, body and spirit – rather than focusing on the patient's disease or condition alone (Finset, 2011; Joseph, Laughon, & Bogue, 2011).

As discussed earlier, patient-centred care is also referred to as being relationship-centred and person-centred care (Zolnierek, 2014). This type of care focuses on more than the patient; it also encompasses patients' families and relevant others as well as the care providers. According to Lawrence and Kinn (2012), it is also essential for healthcare professionals to ensure their

practice is relevant to patients, their family and carers. As also mentioned above, while these terms are also current, for the purposes of consistency and clarity, I will only use the term "patient-centred care" throughout the thesis.

Birks and Watt (2007) studied the increasing prevalence in the health literature of emotional intelligence and its connections to patient-centred care outcomes.

McCormack and McCance (2006) argued that the concept of person-centredness had become established since the early 2000s, particularly in the United Kingdom. They also claimed that being person-centred requires the formation of therapeutic relationships between professionals, patients and their families as well as their significant others.

Benefits of patient-centred care

The US Institute of Medicine (IOM, 2001) published the now well-known report *Crossing the quality chasm: A new health system for the 21st century*. This publication defined good quality care as that which is timely, equitable, patient-centred, safe, effective and efficient.

The report defined patient-centred care as care that is respectful and responsive to each patient's needs, preferences and values, a form of care that is delivered in consultation with the patient's, family and significant others. This ensures that the patient is the centre of control and that information is shared freely in a transparent fashion.

Patient-centred care is an essential component in the pursuit of improvement in quality and safety in health care (Robinson et al., 2008), as the planning and delivery of health care is undertaken with the patient's involvement and active participation.

A number of studies in the literature have described the significant benefits that can be derived when health facilities apply the concepts of patient-centred care. These include improved patient satisfaction and experience; a reduction in the average length of stay; increased patient adherence to agreed or negotiated treatment; reduced morbidity and mortality; decreased malpractice litigation; and an overall reduction in healthcare-associated costs as well as increased health outcomes (Brown et al., 2000; Iacono, 2001; Stone et al., 2007). Charmel and Frampton (2008) argued that applying the concepts of patient-centred care is not just a philosophical position but an intelligent and sound business decision given the benefits of tailoring the care provision to meet the needs and preferences of patients whenever possible.

Further studies have focused on developing disease-specific patient-centred care pathways to enhance the care, quality and cost effectiveness of patients with chronic diseases such as diabetes, heart failure, hypertension and renal failure (Bauman, Fardy, & Harris, 2003; Lawrence & Kinn, 2012; Olsson, Hansson, Ekman, & Karlsson, 2009; Stewart, 2001). All of these studies have reported significant improvements in patient experience, adherence and clinical outcomes.

Other studies, however, challenge the sustainability of applying disease-based patient-centred care pathways for older patients and recommend a common set of patient-centred care pathways to meet the needs of multi-morbid patients (Fuller, Harvey, & Misan, 2004; Røsstad, Garåsen, Steinsbekk, Sletvold, & Grimsmo, 2013).

Challenges to achieve patient-centred care

Given the alleged advantages of patient-centred care, most healthcare leaders advocate the adoption of a patient-centric approach to the planning, delivery and evaluation of care. There are, however, several barriers described in the literature impeding the implementation of

patient-centred care, one of which is the lack of a clear definition of patient-centred care and what it involves (Mead & Bower, 2000; Robinson et al., 2008). There is also a lack of educational emphasis on patient-centred care, with a focus on inter-professional education and practice (Birks & Watt, 2007). The lack of coordination, collaboration and continuity of care is a major impediment and one of the greatest barriers to effective communication and care delivery (Glick & Moore, 2001).

A shortage of healthcare staff has been reported as a significant barrier to the achievement of patient-centred care (Coulter, 2002). Overstretched healthcare practitioners may focus on rituals and routines of practice and meeting patients' physical needs at the expense of also attending to patients' emotional needs (Kelly, 2007). Pelzang (2010) argued that teaching models and curricula on patient-centred care are also seen as an impediment to the delivery of patient-centred care. This relates to the lack of education on social and interpersonal aspects as well as communication skills.

The dominance of a biomedical model in health care is unfortunately a significant barrier to the enculturation of a patient-centred care model. As a result of increasing specialisation, the patients are often not seen holistically and their needs are ignored (Mead & Bower, 2000).

Cost effectiveness of patient-centred care is seen both as a driver to achieve improved clinical outcomes at a reduced cost (Stone, 2008) and as a potential barrier to its implementation. As a result, there may be a need to recruit additional health carers to meet the holistic needs of patients (Coulter, 2002). Olsson et al. (2009) reported that, essentially, the cost effectiveness of patient-centred care is not substantial and conclusive despite the extrapolated 40% reduction in the total cost of treatment for patients admitted with hip fractures as the result of the implementation of a patient-centred integrated care pathway.

The key barriers to patient-centred care identified in a study conducted by Luxford et al. (2011) were related to changing the mindset of health practitioners from a "provider focus" to a "patient focus". The study also reported that the change towards a patient-centred care approach took longer than expected and this initiative needs to be seen as a journey and a commitment and not as a short-term project.

Opportunities to achieve patient-centred care

The implementation of individualised patient-centred care is considered complex and challenging as well as difficult to sustain (Perez-Merino, 2014). The literature reveals several factors that may facilitate the implementation of patient-centred care. Luxford et al. (2011) argued that the most crucial facilitator is the commitment and engagement of the senior leadership of the organisation as patient-centred care is unlikely to improve without the support and commitment of the top leadership. The Chief Executive Officer and the Board must embrace this challenge and lead the enculturation process, focusing on quality and safety and patient experience (Luxford et al., 2011; Pelzang, 2010).

Another key factor in the pursuit of patient-centred care is in communicating a strategic vision of enhancing patient-centred care. This vision needs to be articulated clearly in the organisation's strategic plan and its position descriptions, as well as being plainly stated at each new employee's orientation sessions, and at the regular meetings of units and departments (Birks & Watt, 2007; Lawrence & Kinn, 2012; Luxford et al., 2011).

Engaging patients and their families is vital in striving to achieve a patient-centred care model. Involving consumer representatives in various hospital committees, as well as treating patients as partners, is central in enabling this strategic initiative to become a reality. Patients and their families need to be involved in the planning, delivery and evaluation of the care, in order to

achieve improvements in quality and safety and enhance patient experience (Davies et al., 2008).

A sustained focus on staff satisfaction and a supportive practice environment are considered key factors in facilitating and enhancing patient-centred care. The person-centred concept incorporates patients, families and care givers and it is not exclusively related to patients and their families. Studies have shown strong links between staff satisfaction and patient satisfaction and experience (Davies et al., 2008; Luxford et al., 2011).

Systematic measuring and reporting ("from the board to the ward"), as well as having accountability and incentives, are reported as important enablers of patient-centred care. These two facilitators of patient-centred care are embedded in units' scorecards, staff position descriptions and performance agreements, and in some organisations they are linked to staff remuneration incentives (Luxford et al., 2011).

In the study conducted by Luxford et al. (2011), which investigated patient-centred care promotion, they found that adequate resourcing for healthcare delivery redesign, focusing on 24/7 access, concierge service, overnight stay beds, was highly valued by patients and their families and contributed to the enhancement of the patient experience. Often these service redesigns were reported by the organisations' chief executive officers as simple and inexpensive initiatives. In the same study, she found that building staff capacity and developing a culture of learning and inquiry was seen by patients as another important step towards the enhancement of patient-centred care. These included education and training programs to reinforce the concepts of patient-centred care. Luxford et al., (2001) also found that the utilisation of patient stories from qualitative surveys added further insight for staff, which was in addition to the quantitative data regularly provided.

Davies et al. (2008) reported that health information technology that enables patients to interact with caregivers may enhance nurse–patient partnerships. The study suggests that in order to implement a successful patient-centred care model, organisations require a planned and coordinated approach, with adequate staffing resources as well as sufficient education and investment in the culture and practice environment.

Patient-centred care needs to be contextualised with the expectations, geographical locations and capacity of healthcare systems to deliver in a worldwide context (Kitson, Marshall, Bassett, & Zeitz, 2013). However, patient-centred care cannot be confused with meeting the needs and preferences of patients at all cost (Thórarinsdóttir & Kristjánsson, 2014). Healthcare providers must balance the cost of unnecessary care, even if this is viewed as patient centred, against the need to provide affordable care to the population at large (Burkman, 2012).

To achieve an accountable and sustainable patient-centred care model requires organisations to focus on strengthening safety, quality and patient experience. Therefore, in order to achieve this, organisations may require a structured patient-centred care model supported by appropriate performance improvement and accountability frameworks to facilitate access, and enable reliability, affordability and long-term sustainability.

The Balanced Scorecard

The Balanced Scorecard is a widely used strategic management tool that may enable organisations to increase performance, accountability and strategy execution.

Healthcare leaders, managers and clinicians may benefit from utilising the Balanced Scorecard in conjunction with quality and business frameworks to achieve a patient-centred care model

that is accessible, affordable and innovative. Table C1 in Appendix C (p. 265) contains a concept matrix of the 17 studies reviewed in relation to the Balanced Scorecard.

The Balanced Scorecard is a strategic planning and management system that can assist organisations in increasing accountability as well as achieving long-term performance improvement. It also serves as a communication tool for the whole organisation (Kaplan & Norton, 1992, 1993, 1996a, 1996b, 1996c, 2007). The Balanced Scorecard incorporates both financial and non-financial indicators, which enable leaders and managers to have a fast and comprehensive view of the organisation and consists of four perspectives: the customer, internal process, learning growth and innovation (people), and the financial perspective (Figure 1).

Urrutia and Eriksen (2005) noted that the four perspectives are clearly delineated, stating that the customer and internal process perspectives depict how the organisation may produce or deliver value in the present. The learning, growth and innovation (people) perspective illustrates how it may assist the organisation in generating its value proposition in the future. The financial perspective may explain how this value proposition was generated in the past. Essentially, the Balanced Scorecard describes the financial perspective as a lag outcome indicator of the success or otherwise of deploying the customer, internal process and people perspectives.

This method generates a balanced view of the organisation, a balance between financial, non-financial, efficiency and organisation capacity views of performance. This framework focuses on identifying, measuring and reporting on intangibles, such as customer satisfaction and experience, as well as human and social capital within organisations. Several writers have suggested and recognised that the management of intangible assets is vital for the success of organisations and makes the greatest difference in a competitive market environment (Kaplan & Norton, 2001b; Santos & Fidalgo, 2004).

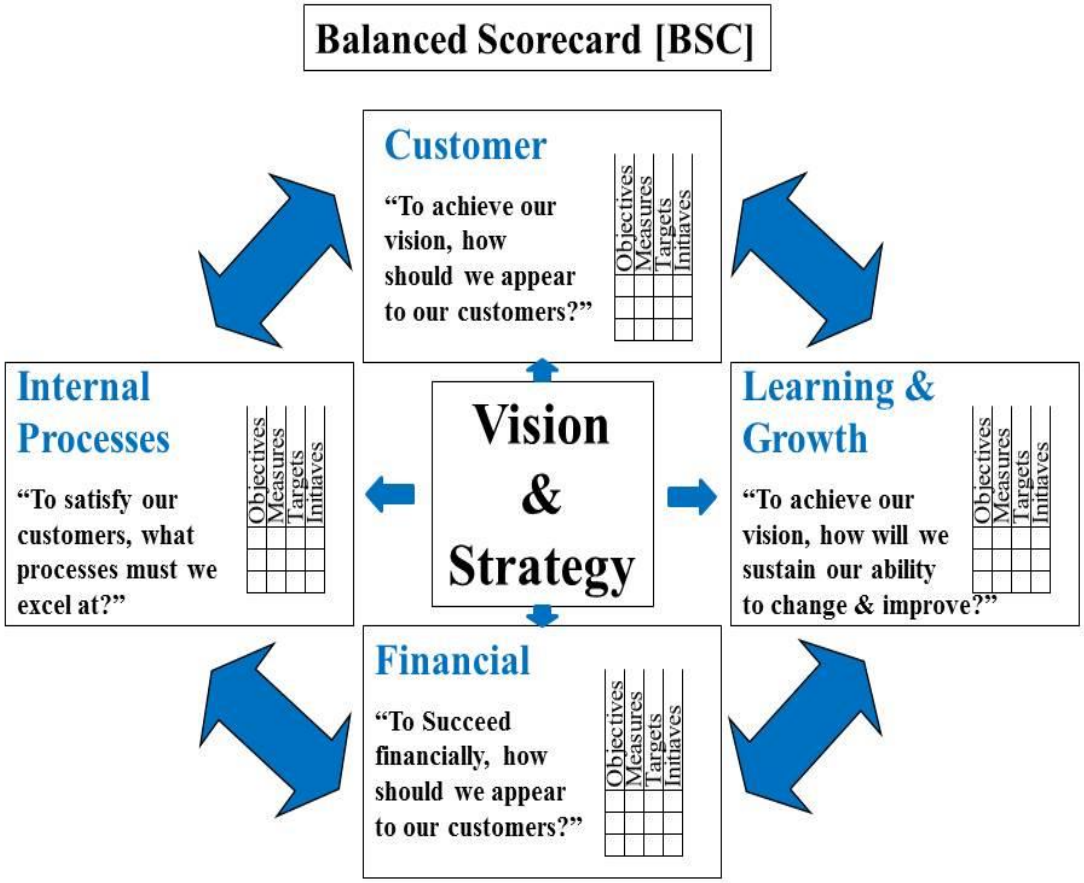

Figure 1. Balanced Scorecard concept and perspectives. Adapted from "Using the Balanced Scorecard as a Strategic Management System," by R. S Kaplan and D. P Norton, 1996c, *Harvard Business Review, 78*(5), p 39. Copyright 1996 by the Harvard Business Review.

The development of the Balanced Scorecard has evolved over the years. It began in 1992 with the first generation of the Balanced Scorecard, which combined financial and non-financial indicators with the four classical perspectives. Within each of these four perspectives, there were specific objectives; measures or key performance indicators; targets; initiatives and clearly allocated accountabilities. The first generation, however, did not include cause and effect indicators (Gurd & Gao, 2007).

The second generation Balanced Scorecard incorporated cause and effect relationships between the indicators and the strategic objectives (Figure 2). At this stage, strategy maps were utilised to illustrate this cause and effect relationship (Henrik, Gavin, & Nenad, 2004).

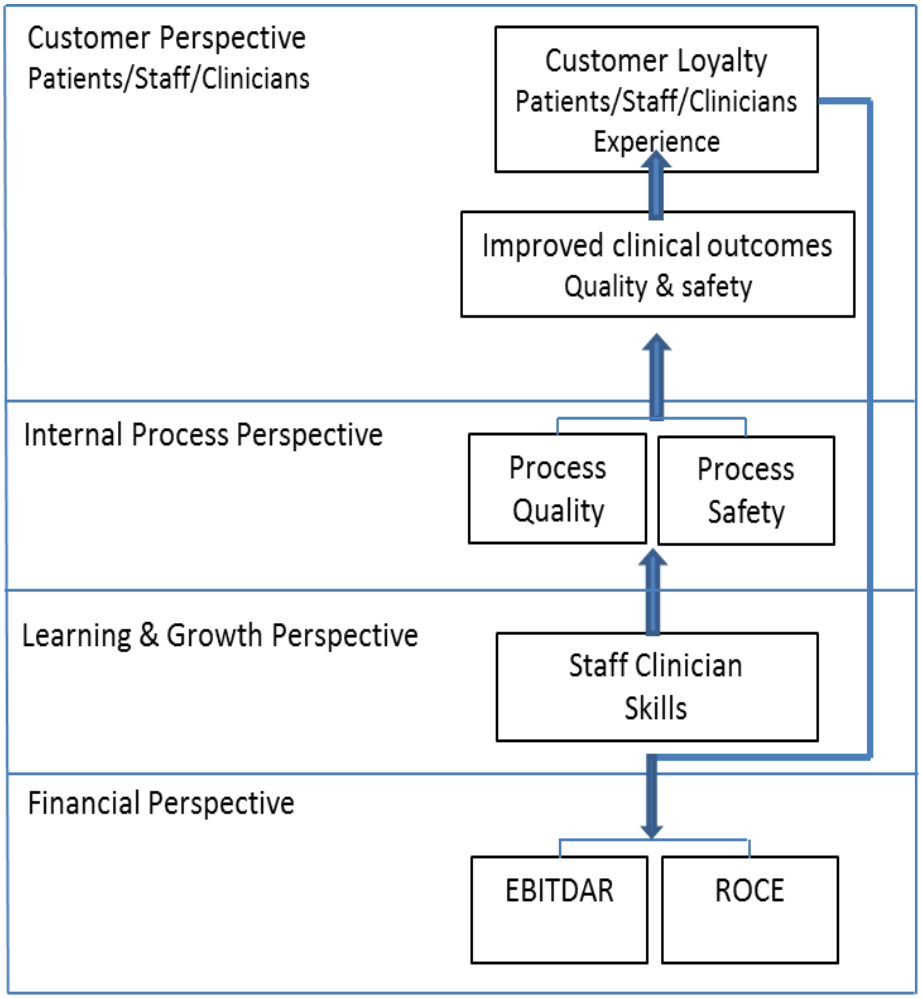

Figure 2. Example of a cause and effect diagram in a simple strategy map. Adapted from "Linking the Balanced Scorecard to Strategy," by R. S Kaplan and D. P Norton, 1996b, *California Management Review*, 39(1), p 55. Copyright 1996 by the regents of the University of California.

The third generation of Balanced Scorecard incorporated strategic control systems with plans of action linked to incentives. In order for the Balanced Scorecard to be categorised as third

generation, it must not only have described the organisation's strategy via a strategy map but also assisted the organisation with strategy execution (Ian, Gavin, & Khalil, 2004).

The first refereed article of the Balanced Scorecard in health care (Griffith, 1994) was published in 1994 and since then several articles have appeared in the healthcare services and management literature (Behrouzi, Shaharoun, & Ma'aram, 2014; Chu, Wang, & Dai, 2009; Grigoroudis, Orfanoudaki, & Zopounidis, 2012; Gurd & Gao, 2007; Inamdar & Kaplan, 2002; Ippolito & Zoccoli, 2013; Kocakülâh & Austill, 2007; McDonald, 2012; Yap, Siu, Baker, & Brown, 2005). Zelman, Pink and Matthias (2003) argued that not only has the Balanced Scorecard entered a growth phase since 1994 but also that it has been adopted by a broad range of organisations including hospitals and hospital systems, both for-profit and not-for-profit.

Silk (1998) found that 60 per cent of the Fortune 1000 companies in the USA have had experience with the Balanced Scorecard. This framework is widely recognised internationally and used by most of the Fortune 500 companies around the world and increasingly amongst healthcare organisations (Kaplan & Norton, 2007).

Gumbus (2005) found that whilst 64 per cent of US companies had adopted a Balanced Scorecard, not all believe that the Balanced Scorecard method would generate lasting value. Some of these companies still see it as a management "fad" that will eventually be replaced by bottom-line financial measures, especially during financial economic downturns (Gumbus, 2005). This mistrust is often the result of a poorly conceived and implemented Balanced Scorecard (McLean & Mahaffey, 2000) and some organisations retrofit already available and collected metrics that are entered into scorecards.

There are many adaptations of the Balanced Scorecard, which are variations and alternative performance measurement frameworks, such as the Sustainability Balanced Scorecard (Möller & Schaltegger, 2013); System-Level Scorecards (Yap et al., 2005); Competing Values

Frameworks (Wicks & St Clair, 2007) and the Dynamic Multi-Dimensional Performance Framework (Maltz, Shenhar, & Reilly, 2003). All of the above alternative frameworks are critical of the value of the Balanced Scorecard; however, the Balanced Scorecard is by far the most widely utilised framework and it has been referred to as one of the most important management innovations of the 20th century (Steele, 2001; Zelman, Pink, & Matthias, 2003).

Kaplan & Norton (1996c) argued that the Balanced Scorecard is a strategic planning and management system that can assist organisations to increase their accountability, achieving long-term performance improvement as well as an effective communication tool for the whole organisation. However, the Balanced Scorecard is not an insignificant undertaking in terms of its implementation, cost and sustainability as it requires a significant and long-term commitment from the senior leadership (Chan, 2006; Hoque, 2014; Rodgers, 2011). The literature on the Balanced Scorecard (Chu et al., 2009; Inamdar & Kaplan, 2002; Lorden, Coustasse, & Singh, 2008; Shoemaker & Fischer, 2011a) suggests that there are considerable benefits to be derived from implementing the Balanced Scorecard framework and it can assist organisations in aligning their business activities and strategies to their mission and vision.

Benefits of the Balanced Scorecard

The benefits that organisations may derive from implementing the Balanced Scorecard depend on what it is being used for, how well it is constructed, and how it is implemented (Hoque, 2014; Inamdar & Kaplan, 2002). There is a growing number of healthcare organisations using the Balanced Scorecard in many different formats (Inamdar & Kaplan, 2002). Some organisations use it for achieving greater operational control and others as a strategic management tool (Kaplan & Norton, 2007).

Kaplan and Norton (2001a) emphasise that the Balanced Scorecard works at its best when organisations utilise it as a strategic management system, focusing on long-term growth rather than short-term gain and profits. Its utility improves when the organisation uses the Balanced Scorecard as a tool to communicate vision and strategy rather than using it to control the actions of staff and employees.

The documented main benefits from implementing the Balanced Scorecard approach relate to improving management effectiveness; communicating and implementing the strategy; mapping the strategy; identifying key measurements and targets; aligning, cascading and embedding the strategy throughout the organisation; utilising the Balanced Scorecard as a change management tool to improve performance and accountability; and providing organisations with a competitive advantage (Hoque, 2014; Hoque & James, 2000).

The benefits that may be derived from the adoption of the Balanced Scorecard can be classified as tangible benefits and intangible benefits. In healthcare organisations, tangible benefits may be related to improvements in financial and non-financial indicators, clinical indicators and patient outcomes. Financial indicators such as return-on-capital-employed (ROCE), (depicted in Figure 2, p. 37), and earnings before interest, tax, depreciation, amortisation and rent (EBITDAR), as well as efficiency indicators expressed as work hours per patient day (WHPPD) and labour costs per hour, highlight just a few (Aguilera & Walker, 2008). Nurse-sensitive indicators such as a reduction in patient falls; medication-adverse events; pressure injury and infection rates are some of the clinical tangibles benefits to be measured. Other tangible benefits are process improvements related to the admission process, healthcare delivery and discharge process. All of these tangible benefits may lead to an enhancement of the organisation's performance, greater frontline accountability and improved outcomes of care, which lead to the long-term success of the organisation (Inamdar & Kaplan, 2002; Kaplan & Norton, 1992, 2000).

Intangible benefits to be derived from the Balanced Scorecard are related to improvements in customer satisfaction and experience for patients, staff and all other relevant stakeholders (Kaplan & Norton, 2001a; Walker & Dunn, 2006). Other intangibles are related to investment in the learning and growth perspective as well as the potential improvement in reputation and "good will" that the organisation may be able to achieve (Aguilera & Walker, 2008; Hoque & James, 2000).

Most of the available literature on the Balanced Scorecard highlights the many positive benefits of implementing this strategic management approach. However, there are critics (Wicks & St Clair, 2007) who argue the Balanced Scorecard is founded on a "control-based management philosophy" that focuses too much on profit and process outcomes and too little on people and organisational culture. Wicks and St Clair (2007) criticised the Balanced Scorecard framework for underemphasising the learning and growth (people) perspective. They also criticised the Balanced Scorecard for not paying sufficient attention to human resources and efficiency aspects, particularly in reference to its conceptual design and implementation in healthcare organisations. Wicks and St Clair (2007) also argued that the Balanced Scorecard under-recognises the skills, knowledge and commitment of the staff, which are vital for the success of the organisation.

Other limitations of the Balanced Scorecard as reported by its critics relate to its concept (Kraaijenbrink, 2012; Neely, 2008), application (Rillo, 2004) and its practice (Antonsen, 2014; Hoque, 2014) argued that these limitations may undermine the effectiveness of the Balanced Scorecard and potentially lead to its abandonment and replacement with alternative performance measurement tools (Neely et al., 2002).

The literature search revealed a number of papers (Aguilera & Walker, 2008; Chu et al., 2009; Inamdar & Kaplan, 2002; Lorden et al., 2008; McDonald, 2012; Shoemaker & Fischer, 2011a;

Trotta, Cardamone, Cavallaro, & Mauro, 2013; Voelker et al., 2001) where healthcare facilities have implemented the Balanced Scorecard with varied results. These studies describe the resources required to implement and sustain the Balanced Scorecard as well as the benefits to be derived from improved accountability and performance across the four perspectives of this framework – the customer, the internal process, the people and the financial perspectives.

According to Shih-Jen and McKay (2002), the Balanced Scorecard framework is consistent with good management and the success of this framework requires the critical involvement of the executive leadership. Its success is also dependent on effective management practices and clear strategic goals, and the Balanced Scorecard cannot be a substitute for these (McCunn, 1998).

Challenges of the Balanced Scorecard

Kaplan and Norton (2000) argued that building and embedding the Balanced Scorecard management system is not an easy project. Whilst the Balanced Scorecard has broad appeal, as stated earlier, Lewy and Du Mee (1998) claimed that over 70 per cent of Balanced Scorecard programs fail.

There is a significant body of literature (Chan, 2006; Fuller et al., 2004; Hoque, 2014; Kaufmann & Becker, 2005; Möller & Schaltegger, 2013; Zelman et al., 2003) that highlights the challenges and barriers that organisations face in implementing the Balanced Scorecard. In addition, a considerable amount of resources is usually required, both human and financial, and often without delivering or achieving the desired outcomes (Kaplan & Norton, 2000).

The challenges found in implementing the Balanced Scorecard can be categorised into three areas: project or design barriers; process barriers; and ongoing use/sustainability barriers

(Inamdar & Kaplan, 2002; Kaplan & Norton, 1996a; Kaufmann & Becker, 2005). The first two barriers had already been identified by Kaplan and Norton (2000).

The most common Balanced Scorecard project/design challenge relates to choosing the right indicators to reflect the organisation's strategy (Kaufmann & Becker, 2005). Kaufmann & Becker, (2005) argued that organisations choose too few indicators within each of the four perspectives and thereby fail to achieve a balance between lead and lag indicators that represent both financial and non-financial indicators. Other organisations choose too many indicators, which lead to a loss of focus and failure to execute the strategy (Kaplan & Norton, 2001b).

Another significant design barrier is the difficulty in collecting timely and accurate relevant data (Kocakülâh & Austill, 2007), as well as identifying the appropriate cause and effect relationships within the organisation's strategy map, which again leads to failure in translating the organisation's strategy into action (Kaufmann & Becker, 2005; Nopadol, 2011).

The most frequently reported Balanced Scorecard process challenges referred to in the literature are gaining endorsement to implement the Balanced Scorecard from key stakeholders (Chan, 2006); obtaining executive time and commitment; developing the value proposition for the customer perspective; embedding the Balanced Scorecard throughout the organisation; gathering and analysing accurate and timely data in a cost-effective manner; and keeping the scorecard simple and using it for learning purposes (Inamdar & Kaplan, 2002).

The ongoing use and sustainability challenges of the Balanced Scorecard are related to environmental uncertainty; inadequate Balanced Scorecard follow-up; review and reporting; insufficient communication; incomplete performance and market data; and inadequate support from consulting experts (Kaufmann & Becker, 2005).

Opportunities with the Balanced Scorecard

Kaplan and Norton (2001) developed a five-step framework to assist organisations in successfully implementing the Balanced Scorecard. The first step in the process is to achieve commitment from the executive leadership team, with a strong case for change articulated and a well-defined vision and strategy developed.

Inamdar and Kaplan (2002) reported that an evaluation of the organisation's ability and readiness to adopt the Balanced Scorecard is critical in terms of knowledge and experience about the Balanced Scorecard methodology and the appropriate allocation of resources such as time, skill sets and information systems.

The second step consisted of translating the strategy into operational terms. This is achieved by developing the strategy map with clear objectives, measures, targets, initiatives and accountabilities. At this stage, consideration of efficiency is critical as too many measures contribute to the loss of focus. The key is to measure as little as possible and ensuring that the organisation is measuring the things that really matter (Neely & Bourne, 2000). Kaplan and Norton (2000) noted that even with the best designed strategy maps, many organisations fail to extract value from the performance measurement data simply because they produce reports and charts but fail to analyse the data and take appropriate action.

The third step was to align the organisation to the strategy by cascading and embedding the strategy throughout all the business units and departments thus ensuring that the strategy is understood and embraced by all the relevant stakeholders.

The fourth step is about motivating the workforce to make the strategy everyone's business, which is achieved by raising awareness of the strategy and aligning personal goals and incentives with the organisation's overall strategy. This is a critical phase in the implementation

process as human capital, not physical capital, may be the ultimate determinant of organisational performance (Youndt, Snell, Dean, & Lepak, 1996).

The fifth step involved and depended on developing a governance structure that supported the organisation in making the Balanced Scorecard framework a sustainable initiative. It required taking on a systems approach and ensuring that the Balanced Scorecard evolved into a strategic management system rather than a measurement system (Inamdar & Kaplan, 2002; Kaplan & Norton, 2001a; Neely & Bourne, 2000; Nopadol, 2011). To achieve success in health care, a successful Balanced Scorecard implementation requires a long-term commitment, which is typical of any other major organisational change (Voelker et al., 2001).

Whilst the literature review on the Balanced Scorecard reveals an increasing number of healthcare facilities adopting this framework (Behrouzi et al., 2014; Grigoroudis et al., 2012; Trotta et al., 2013; Zelman et al., 2003), there are no references in the literature in relation to whether or not the Balanced Scorecard assists organisations in their attempts to achieve an accountable and sustainable patient-centred care model.

Several papers, however, report improvements in healthcare facilities' performance, both financial and non-financial, related to the implementation of the Balanced Scorecard framework (Aguilera & Walker, 2008; McDonald, 2012; Meliones, 2000; Rodgers, 2011; Shoemaker & Fischer, 2011a; Walker & Dunn, 2006).

The literature also indicates that a significant number of Magnet-designated hospitals have adopted a version of the Balanced Scorecard (McDonald, 2012; Meliones, 2000; Shoemaker & Fischer, 2011b).

Conversely, in a study conducted by Gonzalez Sanchez, Lopez-Valeira Sampedro, Pires, and Brocardo (2011), which investigated the literature on the utilisation of the Balanced Scorecard in Italy, Spain and Portugal, they reported that in these three countries, hospitals, in general, do

not consider the patient perspective, nor do they pay special attention to the learning and growth perspective.

Given the gap in the existing literature, the purpose of this study is to gain further insights into the benefits or otherwise to be derived from using the Balanced Scorecard in combination with other quality and business frameworks in pursuit of an accountable and sustainable patient-centred care model.

The Magnet Recognition Program®

The Magnet Recognition Program® is rhetorically referred to as the "gold standard" in nursing excellence and only 426 healthcare facilities in five countries around the world have become Magnet-designated facilities since the 1990s (420 in the USA and six outside the USA). This review explores whether the Magnet Recognition Program® on its own may enable organisations to achieve an accountable and sustainable patient-centred care model.

Healthcare leaders, managers and clinicians need to implement a strategic clinical framework as well as embrace improved business practices. There is an imperative to not only improve quality and safety but also to improve productivity, efficiency and sustainability in striving to achieve a patient-centred care model that is accessible, accountable and affordable. Table D1 in Appendix D (p. 275) contains a concept matrix of the 23 studies reviewed in relation to the Magnet Recognition Program®.

The Magnet Recognition Program® is a strategic framework for developing and sustaining nursing excellence (ANCC, 1994). It is akin to an accreditation program and is conducted by the American Nurses Credentialing Centre. The Magnet Recognition Program® is considered the most prestigious, highest single recognition of excellence in nursing services. The program

provides a framework for organisations to develop a culture that strengthens nurses' autonomy and control of their practice, as well as creating a practice environment that supports the professional development of nurses that leads to improved patient care outcomes (Kramer, Maguire, & Brewer, 2011; Smith, 2014; Walker, Fitzgerald, & Duff, 2014).

Nursing's contribution to the healthcare sector is a strategic differentiator of high-quality care and one that the Magnet journey fully supports (ANCC, 2010). According to Abraham, Jerome-D'Emilia, and Begun (2011), having the organisation's nursing services recognised among the top eight per cent in U.S. hospitals is a mark of excellence that has a strong value proposition for key stakeholders such as clinicians, funders and consumers.

The Magnet Recognition Program® conceptual model, depicted in Figure 3, is based on Donabedian's (2005) theoretical framework: structure, process and outcome. The original 14 forces of magnetism were collapsed in 2008 into a new five-component model: "Transformational Leadership" incorporates the forces of quality of nursing leadership and management style; "Structural Empowerment" includes the forces of organisational structure, personnel policy and programs, community and the healthcare organisation, image of nursing, and professional development; "Exemplary Professional Practice" comprises the forces of professional models of care, consultations and resources, autonomy, nurses as teachers and interdisciplinary relationships; "New Knowledge, Innovations and Improvements" incorporates the force quality improvement; and "Empirical Outcomes" includes the forces of quality of care (ANCC, 1994).

Figure 3. Magnet Recognition Program® – conceptual model. Adapted from "Magnet Recognition Program," by the American Nurses Credentialing Centre, 1994. Retrieved from www.nursecredentialing.org/Magnet/ApplicationsProcess.aspx. Copyright 1994 by the American Nurses Credentialing Centre.

Drenkard (2010b) argued that the new Magnet conceptual model shifts the focus from structure and processes to outcomes. She also claimed that the Magnet journey reframes the question of organisation and individuals from "What do you do?" to "What difference have you made?"

The Magnet Recognition Program® is not a prize or an award. It is a performance-driven recognition credential and achieving it brings external peer recognition and, most importantly, significant internal benefits to the whole organisation (Drenkard, 2010b).

Benefits of the Magnet Recognition Program®

Several papers (Drenkard, 2010a; Higdon, Clickner, Gray, Woody, & Shirey, 2013; Jayawardhana, Welton, & Lindrooth, 2014; Kuhar et al., 2004; McHugh et al., 2013; Wolf, Finlayson, Hayden, Hoolahan, & Mazzoccoli, 2014a) have explored the costs and benefits of Magnet Recognition Program® on the operational performance of healthcare facilities,

highlighting significant benefits to be derived from the successful implementation of this framework.

There are also numerous studies and publications relating to the implementation of the Magnet Recognition Program® in hospitals, particularly in the US, highlighting improved work environments that lead to improved staff satisfaction, clinical outcomes and patient experience (Armstrong & Laschinger, 2006; Armstrong, Laschinger, & Wong, 2009; Brady-Schwartz, 2005; Chen, Koren, Munroe, & Yao, 2014; Laschinger, Finegan, Shamian, & Wilk, 2002; Leiter & Laschinger, 2006; Walker & Aguilera, 2013). Kelly, McHugh, and Aiken (2012), found that Magnet hospitals "have better work environments, a more highly educated nursing workforce, superior nurse-to-patient staffing ratios and higher nurse satisfaction than non-Magnet hospitals" (p. 428).

Additionally, a growing body of research (Aiken, Clarke, Sloane, Lake, & Cheney, 2008; Aiken, Havens, & Sloane, 2000; Aiken & Lake, 1994; Aiken, Sloane, & Lake, 1997; Kramer, 1990; Sullivan Havens & Aiken, 1999; Ulrich, Buerhaus, Donelan, Norman, & Dittus, 2007) indicates that Magnet facilities gain many other benefits in the areas of human resources and financial management such as reduced vacancy and turnover rates, enhanced productivity, greater efficiencies, and improved clinical outcomes, as well as improved engagement and experience for patients, staff and doctors. In fact, Drenkard (2010b) noted that "the old adage 'No margin, no mission' is passé. The new adage foretells the future: No nurses, no margin, no mission" (p. 52).

From this literature review, the following benefits were identified: the Magnet Recognition Program® is a key factor in improving quality and safety (Chen et al., 2014; Drenkard, 2010a; Kramer et al.,2011; Krueger, Funk, Green, & Kuznar, 2013; Kuhar et al., 2004; Lundmark, 2014; McHugh et al., 2013; Russell, 2010; Smith, 2014; Walker & Aguilera, 2013; Walker et

al., 2014), Magnet is linked to patient satisfaction (Chen et al.,2014; Drenkard, 2010; Kramer et al.,2011; Krueger et al., 2013; Kuhar et al., 2004; Lundmark, 2014; McHugh et al., 2013; Russell, 2010; Smith, 2014). The program is also associated with improvements in quality and safety (Aiken et al., 2008; Jayawardhana et al., 2014; Kramer et al., 2011; Krueger et al., 2013; McHugh et al., 2013; Russell, 2010) and can lead to a reduction in healthcare costs (Drenkard, 2010; Jayawardhana et al., 2014; Lundmark, 2014; Russell 2010).

On the other hand, there are several papers (Goode, Blegen, Park, Vaughn, & Spetz, 2011; Mills & Gillespie, 2013; Trinkoff et al., 2010) disputing the links between nursing practice environments and improved patient outcomes in Magnet and non-Magnet hospitals.

Trinkoff et al. (2010) conducted a secondary data analysis from 837 nurses in 171 hospitals (157 non-Magnet and 14 Magnet) and compared perceived nursing practice environments and perceived patient safety. The study found little difference between the two hospital groups. The findings of Trinkoff and colleagues were disputed in a study conducted by Kelly et al, (2012), which included 26,276 nurses in 567 acute care hospitals in four states, to evaluate the differences in work environments in Magnet and non-Magnet hospitals. The findings of this study revealed significantly better work environments, more highly educated nurses and fewer reports of burnout in Magnet than non-Magnet hospitals. Kelly et al (2012) argued that Trinkoff et al's (2010) study was underpowered to detect differences, with only 14 Magnet hospitals out of 171, compared to their own study (2011) which included 47 Magnet hospitals amongst 567 acute hospitals.

A study conducted by Goode et al. (2011) examined the comparison of patient outcomes in Magnet and non-Magnet hospitals and found that non-Magnet hospitals had better outcomes and lower staffing numbers than Magnet hospitals.

Mills and Gillespie (2013) studied the effect of Magnet hospital recognition on two patient outcomes and found no significant difference for risk-adjusted rates for pressure ulcers and failure to rescue between Magnet and non-Magnet hospitals.

Sanders and Davey (2010) noted that most of the research undertaken on the benefits of the Magnet Recognition Program® had so far been conducted in acute care settings by nursing researchers. Sanders and Davey (2010) acknowledged and recognised their nursing researchers' efforts, but questioned the rigour of some of these studies and proposed that additional research ought to be conducted by organisational behaviour scholars to extend the breadth and depth of this research topic.

Whilst the benefits or otherwise of the Magnet Recognition Program® require additional examination, three decades of research evidence conducted by Aiken et al, (1994,1997, 1999, 2000, 2008); Armstrong & Laschinger, (2006), Armstrong, Laschinger, & Wong, (2009); McClure et al, (1983) have showed better work environments and superior nurses' and patients' outcomes for Magnet than non-Magnet hospitals.

Challenges of the Magnet Recognition Program®

The main challenges encountered by organisations considering undertaking the Magnet journey are related to meeting the eligibility criteria; preparedness, readiness, and financial considerations; and long-term sustainability of the program (Higdon et al., 2013; Kuhar et al., 2004).

Together with all of the above, there are number of myths associated with the Magnet Recognition Program®. These relate to it being too costly, too "American", too exclusive and

too hard (Aiken, Buchan, Ball, & Rafferty, 2008; Armstrong, 2005; Heitmann, Svetic, & Meyenburg-Altwarg, 2013; Joyce & Crookes, 2007; Pinkerton, 2005).

In terms of eligibility, the Director of Nursing must have at least a Masters degree in Nursing; 100% of nurse managers and leaders must be qualified at Bachelor level; 80 per cent of all clinical nurses must have a Bachelor's degree by 2020; the organisation's nursing staff engagement, patient satisfaction and experience, as well as the required nurse-sensitive indicators, must all be better than the national benchmark database in the majority of the clinical units and for the majority of the time (ANCC, 2010).

In relation to the perception of being too hard or perhaps unnecessary, this often emanates from within and outside the nursing service's leadership. The Chief Executive Officer and the Board of Directors need to be made aware of the benefits of the Magnet Recognition Program® and their approval is required to begin the journey (Drenkard, 2010a).

In reference to the perceived financial concerns, pursuing Magnet recognition is challenging. It requires the deployment of significant resources and requires a fundamental cultural paradigm shift within organisations. The estimated cost associated with implementing the Magnet Recognition Program® varies according to an organisation's size, existing culture and outcomes of care (Higdon et al., 2013).

Russell (2010) claimed that the estimated cost is between US$10,000 to a maximum of US$600,000 per year with varying ranges between years. Drenkard (2010a), however, argued that the costs associated with the Magnet journey ought to include only those that are over and above the normal costs for running the nursing service within the hospital. She reported that the costs vary from US$46,000 to US$251,000 per year, depending on the number of beds and the resource decisions made by the hospital. More importantly, the return on investment is compelling and reported as being tenfold (Drenkard, (2010a).

In terms of long-term sustainability, once Magnet recognition is achieved, the Magnet principles need to be enculturated (Drenkard, 2010a) throughout the facility, requiring organisations to maintain and continually improve their standards of quality and safety, and improve patients' outcomes and staff and patients' experience.

To implement the Magnet Recognition Program® successfully requires strong leadership from the Director of Nursing, who needs to manage the program throughout the organisation (ANCC, 2010). Drenkard (2010a) argued that a compelling business case needs to be made that articulates the expected benefits to be derived from implementing the program.

It is essential for the nursing leadership to be on board, supporting and commencing discussions with clinical nurses from the various units and departments within the organisation (ANCC, 1994). The nursing leadership must clearly articulate what are the expected benefits for nurses, doctors and, most importantly, for patients and their families (Drenkard, 2010a).

The American Nurses Credentialing Centre (1994) recommends that a gap analysis be undertaken to assess how the organisation compares and complies against the standards and criteria within the Magnet Recognition Program® application manual. Upon completion of the gap analysis, an action plan is developed to focus, guide and prioritise the work identified that requires attention.

Building a supportive professional milieu that enables nurses to develop and flourish is an essential requirement of the Magnet Recognition Program® (Kramer et al., 2011; McHugh et al., 2013). Shared governance structures that facilitate nurses' involvement in decision-making are central to enhancing the work practice environment.

Revenue Cycle Management Program

Revenue cycle management is critical for the financial viability and success of healthcare facilities and most struggle to get it right. This review explores the impact of a clinically focused revenue cycle management program that concentrates on clinical documentation, length of stay management and revenue optimisation, in assisting the Hospital to achieve an accountable and sustainable patient-centred care model.

Healthcare bureaucrats, leaders, managers and clinicians need to sharpen their focus on achieving an efficient and streamlined revenue cycle, both from a financial and clinical perspective. Greater emphasis in attaining an appropriate length of stay, ensuring adequate medical documentation for coding purposes, and stopping avoidable revenue leakages are a few of the basic key steps required.

Table E1 in Appendix E (p. 286) contains a concept matrix of the eight studies reviewed in relation to revenue cycle management.

Revenue cycle management is the process of how a patient's financial and health information flows into, through and out of the healthcare facility, and ends with the facility receiving reimbursement for the services provided and when the balance of the patient's account is zero. Revenue cycle management means taking steps to ensure that you get paid for what you do and that you get paid in a timely fashion (Nelson, 2011).

Streamlined and efficient revenue cycle management is the cornerstone of a successful healthcare organisation. Equally, inefficient revenue cycle management, where staff lack the proper skill sets, can adversely impact the healthcare facility's financial performance (Fahrenholz, 2010).

The blunt reality according to Fahrenholz (2010) is that a flawed revenue cycle management strategy could easily close a marginally performing hospital for good. Mathur and Lorusso (2012) claimed that revenue cycle management holds the key to successful financial contracting in the world of increasing accountability reform.

Financial, clinical, and operational performance must no longer function in silos (Eldenburg, Schafer, & Zulauf, 2004). Today's revenue cycle aims to increase the amount and the speed of patient revenue collection and improve access and enhance the patient experience (Rauscher Singh & Wheeler, 2012). Effective revenue cycle management is vital for hospitals' profitability and their capacity to grow their equity capital (Rauscher, 2010). The effectiveness of an organization's revenue cycle has enormous implications on the financial performance, and is demonstrated in net revenue realisation, cash flow, and patient satisfaction (Mallipeddi, 2010).

Benefits of a revenue cycle management program

"Increased profits, streamlined operations and a strengthened financial position are all benefits of the right type of revenue cycle management implementation" (Mallipeddi, 2010, p. 24). This is important as healthcare providers' primary focus is on achieving quality patient care and the "health" of their business is often neglected (Degen, 2010).

According to the Healthcare Financial Management Association [HFMA] (2014), a successful revenue cycle management program may generate additional benefits such as improving financial performance by raising revenue cycle staff's knowledge; measuring revenue cycle staff's proficiency; recognising staff knowledge and expertise; decreasing turnover; decreasing liability; increasing inter-departmental cooperation; heightening staff confidence and work satisfaction; and enhancing reporting capabilities.

Mallipeddi (2010) argued that not only will the organisation receive payments in a timely manner but will also reduce the burden on the billing staff, keep down administrative costs, and, most importantly, maintain a positive rapport with patients.

Rauscher (2010) claimed that successful management of the patient revenue cycle is a major factor in the ability of a healthcare facility to build equity capital, boost profitability, and achieve long-term sustainability, with the added benefit of fostering patient relationships. He also claimed that a robust and successfully implemented revenue cycle management program can become the lifeline for organisational growth and sustainability.

Other benefits found in the literature relate to improved healthcare facility financial performance (Colpas, 2013; Degen, 2010; HFMA, 2014; Mallipeddi, 2010; Mathur & Lorusso, 2012; Rauscher Singh & Wheeler, 2012; Terrell, 2013); reduction in healthcare costs (Colpas, 2013; Degen, 2010; HFMA, 2014; Mallipeddi, 2010; Mathur & Lorusso, 2012; Rauscher Singh & Wheeler, 2012; Terrell, 2013); the building of capital and long-term sustainability (Rauscher, Singh, & Wheeler, 2012); and improved access, patient care and satisfaction (Edwards, Silow-Carroll, & Lashbrook, 2011; Terrell, 2013).

Challenges in implementing a revenue cycle management program

A major challenge for healthcare facilities is to obtain adequate, accurate and appropriate documentation from clinicians in order to code the inpatient episode of care (Cheng, Gilchrist, Robinson, & Paul, 2009). These authors found that the single most problematic issue for health information managers and coders was in allocating the most appropriate diagnosis-related group to the patient's medical record. This was due to the lack of or inadequate documentation, where the episode of care was often under-coded and resulted in lost revenue to the

organisation. Conversely, the patient record may be over-coded, which then requires the organisation to reimburse health insurance funds (Cheng et al., 2009).

The coding task consists of classifying diagnoses, signs and symptoms, services or procedures, as well as supplies, and assigning an alphanumeric to narrative diagnostic and procedural statements. The resulting coded data can then be collected, stored, and manipulated for both internal and external purposes. Internally, coded data is used for marketing, budgeting, clinical governance and quality improvement projects. Externally, it may be used to assist in monitoring quality and safety, planning future healthcare developments or to reimburse healthcare providers (Fahrenholz, 2010).

Whilst coding issues are the most significant challenge, they are not the only reason for health funds to not appropriately reimburse healthcare facilities (Colpas, 2013). Colpas, (2013) notes that incorrect patient information and non-adherence to health insurance billing rules can also result in under-payments or non-payments. Therefore, it is essential that the coding and billing teams keep up-to-date information on billing guidelines for all health insurance funds (HFMA, 2014). Information technology systems, or the lack of, present a major challenge to healthcare facilities attempting to navigate the immensely complex health insurance regulatory environment. Automation is critical for the success of a revenue cycle management program (Colpas, 2013). Another challenge is not submitting a correct, accurate and completed claim the first time. Billing correctly the first time can avoid long delays in claims processing and, in some instances, can achieve a superior reimbursement level (Cheng et al., 2009). According to Degen (2010), managing the revenue cycle efficiently is no easy task. It requires constant evaluation and re-evaluation at every step of the revenue cycle process. Each phase of the revenue cycle, from the moment a patient is booked for admission until the time the patient's account payment is received from the health funds, is equally important to optimise insurance reimbursement and revenue entitlements (Cheng et al., 2009).

Opportunities with a revenue cycle management program

Healthcare facilities may decide to implement a revenue cycle management program for a number of reasons. Some may realise that they are not generating the expected profit margin and are pressured to do so from their boards of directors. Others require a new billing system as the existing one is no longer supported by their vendors or, simply, because the organisation is aware that other facilities have successfully implemented a revenue cycle management program and they need to remain viable and competitive in the healthcare market.

Whatever the reason to embark on a revenue cycle management program, the potential benefits far outweigh the investment required to improve the financial, operational and clinical performance of the healthcare facility (Colpas, 2013; Degen, 2010; HFMA, 2014; Mallipeddi, 2010; Mathur & Lorusso, 2012; Rauscher Singh & Wheeler, 2012; Terrell, 2013).

The literature presented herein suggests that healthcare providers seeking to implement a revenue cycle management program need to focus on three critical areas that may assist them in implementing such a program. The critical areas relate to private health insurance funds (payers), patients and healthcare facilities (providers) (Degen, 2010; Rauscher Singh & Wheeler, 2012). First, facilities are required to negotiate contracts with payers. This initial step is critical as many providers find themselves being paid at a much lower reimbursement rate than others in the immediate healthcare market simply because they were not able to negotiate a good reimbursement rate in their contract negotiations.

There is increasing pressure from funders to decrease fee-for-service payments and move towards bundling (grouping services for payment purposes) and episodic payment models (Mathur & Lorusso, 2012; Terrell, 2013). These are often complex and require sophisticated information technology systems, strong analytics, and streamlined operational processes to appropriately navigate and manage them (Glaser, 2014).

Second, patients are required by the *Australian National Health Act 1953* (sections 73BDAA and 73BDA) to be provided with informed financial consent prior to being admitted into a healthcare facility. Failure to comply with this requirement often leads to patients' accounts being disputed and almost invariably the hospital has to write the accounts off and lose the revenue.

Third, providers must have robust systems and processes in place to ensure the integrity of the account and claims are in accordance with the negotiated contract's business rules. These include patient eligibility verification; co-payment collection; coding; claim submission; remittance advice; patient statements; and patient payment options (Degen, 2010). Critical to this step is the appropriate management of the inpatient's length of stay. If the length of stay exceeds, or in some instances, is below the negotiated length of stay period, the provider may sustain a loss in revenue. Documentation is also vital to the allocation of an accurate code to reflect the care provided to the patient and for the provider to be appropriately reimbursed for the care delivered (Rauscher, 2010).

Discussion

The search strategy generated numerous articles and studies that described the implementation and benefits of patient-centred care, the Balanced Scorecard, the Magnet Recognition Program® and revenue cycle management programs in healthcare organisations. However, none of the literature reviewed examined the combined impact of these three frameworks in the pursuit of an accountable and sustainable patient-centred care model.

First and foremost, to achieve patient-centred care, organisations need to be able to provide adequate access, appropriate levels of care as well as quality and safety in the delivery of care

(Ellis, 1999; Olsson et al. 2009). Organisations are also required to improve efficiency and productivity and at the same time remain sustainable and viable (Robinson et al. 2008). These challenges occur in a climate of increased financial pressure, which is to do more with less (Iglehart, 2009) and to accommodate the demands of an ageing population with an increasing range of chronic conditions (Berwick & Hackbarth 2012). These challenges are compounded by the heightened level of community expectations coupled with health carers' desire to deliver on the promise of patient-centred care (keast, 2015).

Therefore the point to be debated is whether the system is over-promising and under-delivering. Can the system afford to continue to deploy scarce healthcare resources to meet the increasing needs and expectations of healthcare professionals and patients? These are questions that would require further research to address the increasing demand of the developed western world as it relates to the provision of healthcare services.

Whilst these questions are beyond the scope of this review, clearly, a different approach needs to be explored to meet current and future healthcare needs of the population. A focus on enhancing primary care and ambulatory services, with an increased emphasis on health education, promotion, prevention and early intervention, is required. New and different models of care delivery need to be implemented, preferably in out-of-hospital locations and, whenever possible, in patients' own homes, delivered safely by an appropriately qualified workforce. Leveraging on existing human resources, as well as educating and training additional categories of healthcare practitioners, requires serious consideration in order to successfully attempt to deliver an accountable and sustainable patient-centred care model.

The literature review revealed a substantial amount of published material on patient-centred care, the Balanced Scorecard, the Magnet Recognition Program® and, to a lesser extent, on revenue cycle management. Whilst it is evident that many healthcare facilities have and are

increasingly adopting the Balanced Scorecard, and a growing number of these are also pursuing Magnet Recognition, only two articles were found discussing the potential impact of the Balanced Scorecard and Magnet Recognition Program® on healthcare facilities' performance outcomes. No articles, papers or studies were found that examined the combined impact of the Balanced Scorecard, the Magnet Recognition Program® and revenue cycle management on organisations striving to achieve an accountable and sustainable patient-centred care model.

There is an overwhelming body of research that demonstrates the positive correlation between an improved nursing practice environment and the positive impact that it has on improving staff experience and, most importantly, patient experience and outcomes of care (Aiken et al., 2008; BPA, 2007, 2009, 2011, 2013; Kuhar et al., 2004; McHugh et al., 2013).

The Magnet Recognition Program® is clearly more than a *patient-centred* model; it is a *person-centred* care model. The program concentrates not only on patients, but on the providers of care and the condition and resources within the practice environment that facilitates the provision of excellence in nursing practice and patient care.

The majority of the care provided in hospitals is delivered by nurses. Up until the development of the Magnet Recognition Program®, there was not an existing framework to assist, measure and benchmark the work performance of nursing services. Every other sector of the healthcare industry had systems for assessment and credentialing. The Australian Council on Healthcare Standards provides a hospital-wide framework for accrediting hospitals that meet the set of standards. The National Association of Testing Authorities, Australia, is responsible for assessing laboratories, pathology and medical imaging companies. The Pharmacy Guild of Australia's Quality Care Pharmacy program is a quality assurance program for community pharmacies. The Hazard Analysis Critical Control Points program provides a risk management

tool that supports management system standards across the food industry, which includes healthcare facilities' food services.

The development of the Magnet Recognition Program® was not only timely but a most welcome initiative. The Magnet Recognition Program® contains standards of excellence for an organisation's nursing services to aspire to, unlike the Australian Council on Healthcare Standards' accreditation program. However, one of the main criticisms of the Magnet Recognition Program® is that it needs to be truly internationalised by the American Nurses Credentialing Centre by adopting a much more embracive program that acknowledges the significant differences in healthcare systems outside the USA (Walker & Aguilera, 2013). Often international organisations struggle to meet the Magnet Recognition Program's® eligibility criteria due to the US educational and credentialing system. There is a lack of understanding and/or willingness to consider equivalence to meet the expected rigid US standards. This matter is critical to the success, sustainability and growth of the program in Australia and the other three countries outside the US with Magnet-designated facilities.

The Magnet Recognition Program® alone is not an all-encompassing framework that may enable organisations to achieve an accountable and sustainable patient-centred care model. The Magnet Recognition Program® is certainly an important one, and is one of the key frameworks required. The organisation, however, requires more than a nursing excellence framework; it also requires a strategic management system such as the Balanced Scorecard. The Magnet Recognition Program® is not necessarily geared towards achieving higher levels of productivity and efficiency. Its focus is not primarily on reducing costs, improving access and generating revenue growth and prosperity. Whilst the Magnet Recognition Program® is vital for the achievement of higher levels of quality and safety and improved staff and patient experience, on its own, it may not deliver accountable and sustainable patient-centred care.

The aim of achieving an accountable and sustainable patient-centred care model remains somewhat obscure as there is no clear definition of what constitutes patient-centred care and how it can be measured, let alone describing what accountable and sustainable patient-centred care looks like, and for what, to whom and how is it accountable (Fisher & Shortell, 2010)?

However, in the US, Accountable Care Organisations have emerged as a result of the Patient Protection and Affordable Care Act, also known as "Obamacare". (Demko, 2014). These organisations' major aim is to improve access, quality of care, reduced costs and ensure the long-term sustainability of the health system (Epstein et al., 2014).

Whilst Magnet is a commitment to excellence and recognition, Accountable Care Organisations are committed to quality and reimbursement. Jenkins and Jarrett-Pulliam (2012) argued that the creation of both an Accountable Care and Magnet organisation is a strategic initiative and a synergistic priority to transform the healthcare system and address the existing and future challenges.

The unquestionable finding is that the existing structures and processes in the provision of health care are becoming increasingly unsustainable (Epstein et al., 2014). Most healthcare systems in the developed world are challenged by the sizeable and increasing percentage of their gross domestic product being spent in an attempt to meet the healthcare demands of an older population. This is exacerbated by chronic illness, development in technologies and growing community expectations.

When it comes to assess the outcomes of this growing investment in health care, the findings are less than impressive in terms of access to health care, equity in its provision and value for money. The benefits found in this literature review are positive when the value associated with the successful implementation of the three frameworks is integrated. All of these benefits may

lead to improvements in quality and safety, patient satisfaction and experience, with a corresponding decrease in costs.

The challenges are also significant in that they require healthcare organisations to exert leadership and focus when examining their existing structures and processes: some may be required to adopt new frameworks with greater emphasis on accountability and performance; others may need to strengthen their practice environment and cultures to deliver improved patient-centred outcomes.

Elimination of waste and improvements in productivity and efficiency are also becoming an increased priority to ensure affordability and sustainability, and, certainly, the complexity of the healthcare system imposes additional challenges in terms of funding sources, policy and regulatory requirements. The opportunities are many for those leaders committed to making a positive contribution to the lives of those entrusted to them.

Striving to achieve an accountable and sustainable model of care is a noble objective. Whilst the concept requires greater research into what constitutes patient-centred care, and how it can be measured, it needs to be pursued by all involved in the planning, funding and provision of health care, as well as, the recipients of care.

The strength of this review is that it addresses a gap in the available literature and examines the combined impact of the three frameworks in assisting organisations to achieve accountable and sustainable patient-centred care. It contributes to the body of knowledge by providing an analysis of the benefits, challenges and opportunities to be derived from adopting these into an integrated patient-centred care model.

There are several limitations in this review. First, there is a lack of empirical studies, which is coupled with a high number of conceptual, descriptive and narrative papers. Second, the articles

related to revenue cycle management focus primarily on the financial management aspects of revenue flow within organisations, with a lesser emphasis on clinical impact.

Implications and recommendations

Healthcare leaders, managers and clinicians may benefit from considering and adopting an integrated patient-centred care model that incorporates the benefits of the Balanced Scorecard, the Magnet Recognition Program® and revenue cycle management. Additional research is required into how these frameworks, in combination, may assist healthcare organisations in their pursuit of an accountable and sustainable patient-centred care model.

Conclusion

The purpose of this literature study was to focus on exploring the concept of patient-centred care and the last 20 years' worth of literature related to the Balanced Scorecard, the Magnet Recognition Program® and revenue cycle management programs and their application to healthcare organisations. The focus was also to review the impact that these frameworks may have in assisting healthcare organisations to improve quality and safety, patient satisfaction and staff experience as well as achieve financial viability and long-term sustainability.

The Balanced Scorecard, the Magnet Recognition Program® and a revenue cycle management program considered separately generate benefits to organisations as described in the existing literature. However, the combined impact of these three frameworks, working concurrently to support a patient-centred care model, is not entirely known and it requires research in this area.

This review of the available literature suggests that the Balanced Scorecard may assist organisations from a strategic management system perspective; the Magnet Recognition Program® from a nursing and clinical perspective; and, and a revenue cycle management program from a financial and business model perspective. The utilisation of these frameworks in combination may work to the advantage of organisations striving to achieve an accountable and sustainable patient-centred care model.

Given that there is no published research on the combined impact of these frameworks, this research study contributes towards gaining a better understanding of how these three frameworks used together may impact on the performance of healthcare organisations.

Chapter 3

Research Design and Methods

This chapter describes the aim of the research study and provides an overview of the research design and methods. The methods used for the quantitative and qualitative components of the study are presented separately. The ethical considerations raised by the research studies are also included.

Aim of the Study

The aim of this research is to analyse the financial, clinical and cultural impact of the three improvement frameworks implemented at St Vincent's Private Hospital Sydney between 2005 and 2015, and to determine the effect on the Hospital's overall performance and sustainability (towards the pursuit of an accountable an sustainable patient-centred care model) before and after implementation, with a total study period of 10 years.

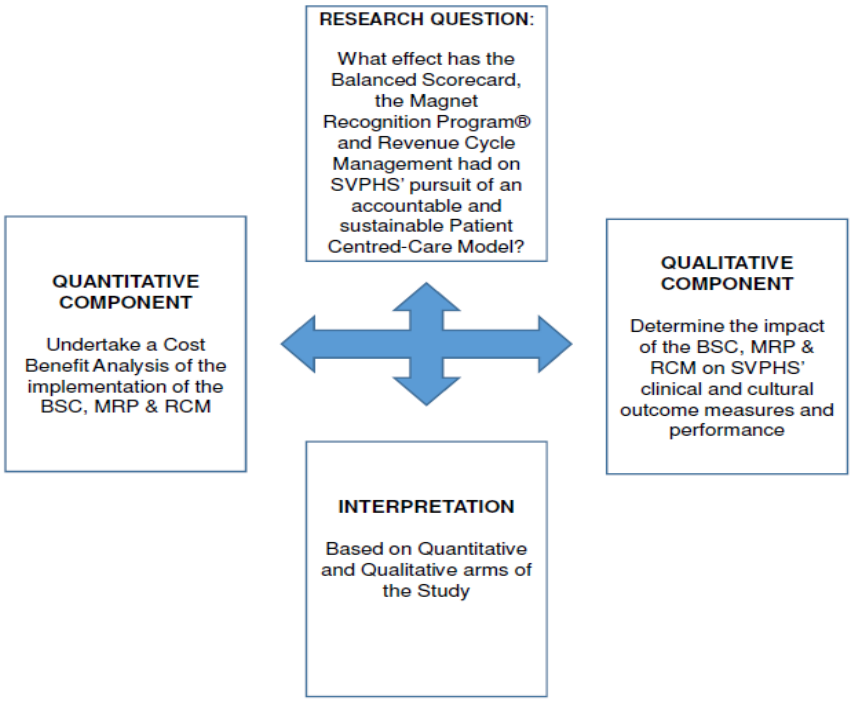

Figure 4. Research question and aim

Research Question

What effect has the Balanced Scorecard, the Magnet Recognition Program® and revenue cycle management had on St Vincent's Private Hospital, Sydney's pursuit of an accountable and sustainable patient-centred care Model?

Research significance

Today's global healthcare environment is faced with the great challenge of ensuring organisational sustainability whilst advancing quality and safety. This challenge and opportunity lies heavily on nursing as a profession. Nursing leaders at the Hospital are accountable for optimising workforce productivity, streamlining clinical operations and managing patient care across the continuum whilst attempting to develop innovative staffing models and facilitating interdisciplinary collaboration. There is a need to strengthen clinical governance by implementing a performance improvement program, focusing on enhanced accountability with the Balanced Scorecard; improving the practice environment, delivering safer and higher standards of quality and patient experience with the Magnet Recognition Program®; and improving the Hospital's business model by developing a clinically focused revenue cycle management program.

This study examined the structures, processes and outcomes in the implementation of the Balanced Scorecard, the Magnet Recognition Program® and the revenue cycle management program and their effectiveness in contributing towards the achievement of an accountable and sustainable patient-centred care model. The study seeks to make a contribution by exploring the knowledge gap of organisations that are Magnet designated and use either, or both, the Balanced Scorecard and a revenue cycle management program to achieve greater sustainability towards a patient-centred care model.

Overview of the Research Design and Methods

The PICO criteria specified by Petticrew and Roberts (2008), structures research questions according to four attributes: population, intervention, comparison, and outcome (Table 2). This framework was used to inform the literature search and the structure of the research question and the PICO question statement.

Table 2

PICO Framework

Population	St Vincent's Private Hospital Sydney, Patients, staff (clinical, administrative, support & volunteers)
Intervention	The Balanced Scorecard, The Magnet Recognition Program® and a Revenue Cycle Management program
Comparison	Comparing before and after the implementation of the three improvement frameworks
Outcome	Overall Hospital performance: Clinical, Cultural & Financial

The research design incorporated a mixed-methods approach to data collection to address the research aim and question. The design included: (1) a quantitative component to explore the cost and benefits of implementing the Balanced Scorecard, the Magnet Recognition Program® and a revenue cycle management program at the Hospital, and (2) a qualitative component to seek feedback from clinicians and managers in relation to the implementation of the three frameworks with a view to analysing the impact that these frameworks have had on the people undertaking their respective roles and linking their feedback to the findings of the quantitative study. The study design consisted of a modified sequential explanatory mixed-method organisational single-case study design (Creswell, 2013).

Figure 5. Sequential explanatory design. Adapted from "Research Design: Qualitative, Quantitative, and Mixed Methods Approaches," by J. W. Creswell, 2013. Copyright 2013 by Sage Publications.

Mixed methods consist of collecting, analysing and mixing quantitative and qualitative data for the purpose of gaining a greater understanding of the research problem (Hanson, Creswell, Clark, Petska, & Creswell, 2005). When used in combination, Teddlie and Tashakkori (2009) argued that quantitative and qualitative methods complement each other and allow for a healthier analysis by capitalising on the attributes of both.

As with any mixed-methods design, the issues of priority, implementation and integration of the quantitative and qualitative data collection and analysis require due consideration (Creswell, 2013; Teddlie & Tashakkori, 2009) to determine which of them (quantitative or qualitative) needs more emphasis in establishing the sequence as well as deciding on the mixing and integration of the quantitative and qualitative approaches.

In terms of priority of data collection, the study question needed to emphasise the quantitative impact of the three frameworks introduced at the Hospital, and, given the nature of a sequential explanatory design, this approach was adopted to address the research question. The priority given to the quantitative approach is depicted in Figure 6, which represents the major aspects of the mixed-methods data collection and analysis processes.

With regards to implementation, the quantitative data collection and analysis was undertaken first, followed by the qualitative data collection and analysis of the impact of these frameworks

on the Hospital's staff in discharging their respective roles as well as linking their responses with the findings of the quantitative results (Greene, Caracelli, & Graham, 1989).

The integration stage/s refers to the process where the mixing or integration of the quantitative and qualitative methods takes place (Teddlie & Tashakkori, 2009). In this study, the quantitative and qualitative findings were integrated at the interpretation stage of the study (Onwuegbuzie & Combs, 2011).

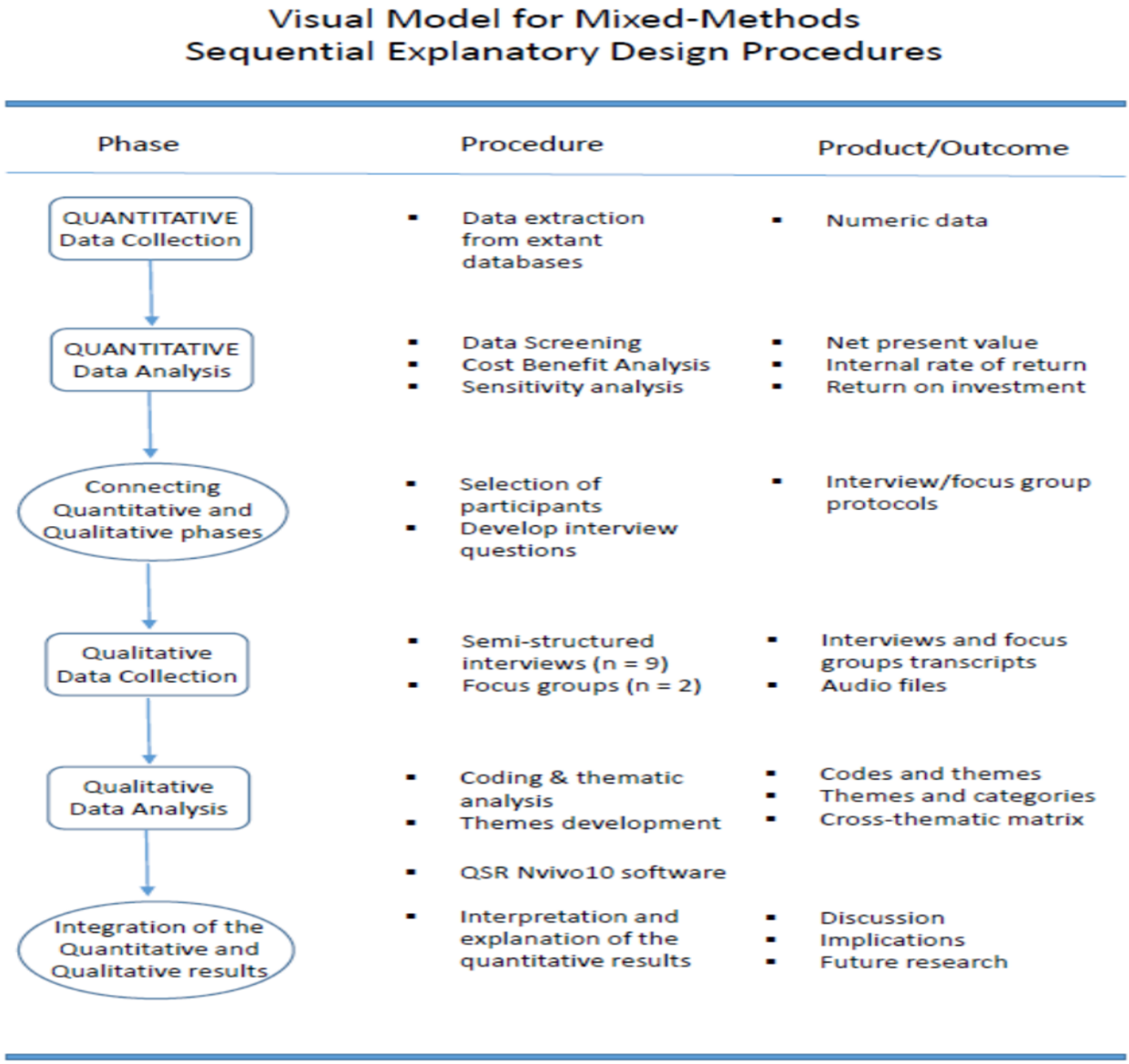

Figure 6. Visual model for mixed methods. Adapted from "Using Mixed-Methods Sequential Explanatory Design: From Theory to Practice," by N. V. Ivankova, J.W. Creswell and S. L. Stick, 2006, *Field Methods, 18*(1), p.16. Copyright 2006 by Sage Publications

I will now proceed to present the design and methods used for both components of the study, quantitative and qualitative.

Quantitative Component

Economic evaluation of the frameworks

A cost-benefit evaluation of the three frameworks was undertaken to ascertain the impact of these frameworks on the Hospital's clinical, cultural and financial performance. The three frameworks were selected due to the need to investigate and analyse the value proposition (if any) of each (and in combination) of these impacting on the overall performance of the Hospital over the 2005–15 period.

The initial motivation for undertaking this economic evaluation stemmed from St Vincent's Health Australia's request that the Hospital undertake an economic evaluation of the Magnet Recognition Program® to determine its ongoing endorsement, applicability and sustainability across the Hospital and potentially other facilities within the broader organisation. Therefore, an initial cost-benefit analysis was undertaken (in 2014) on the impact of the Magnet Recognition Program®. This analysis revealed that there were other significant factors that may have impacted on the Hospital's performance such as the introduction of the Balanced Scorecard seven years earlier as well as the introduction of the revenue cycle management program in 2014. These two additional frameworks may have augmented the reported outcomes of the Magnet Recognition Program®. Hence, I felt that the three frameworks required a more comprehensive economic evaluation to assess their individual as well as their combined impact on the overall performance of the Hospital, and this project became the driving force for my doctoral thesis.

In 2015 (the reference year), a retrospective cost-benefit analysis was undertaken over the 2005–15 period to ascertain the impact (cost and benefits expressed in monetary terms) of the three frameworks on the Hospital's commitment to its quality and safety agenda (patient-centred care).

Cost-benefit analysis is a frequently used evaluation tool; however, academics are often sceptical about its applications (Adler & Posner, 2000). This management tool has both champions (Ergas, 2009), as well as detractors (Sen, 2000). The aim of cost-benefit analysis is to provide a consistent process for evaluating decisions in terms of their consequences (Dobes, 2008; Newcomer, Hatry, & Wholey, 2015). This might be considered as a reasonable tool to adopt, but it is by no means the only one to use (Diakoulaki & Karangelis, 2007).

In this study, a cost-benefit analysis instead of a cost-effectiveness analysis or cost-utility analysis was used as both the latter are widely used to assess the impact of healthcare technologies where the outcomes are not monetised but measured in terms of natural units or utility measures – for example, the quality adjusted life years (Drummond, Sculpher, Claxton, Stoddart, & Torrance, 2015). A cost-benefit analysis was performed due to the wide variety of outcomes being analysed and the need to estimate and compare the financial return on investment of these frameworks.

With a cost-benefit analysis, the benefits of a given situation or business-related actions are summed and compared to the costs associated with taking those actions. This management tool also describes the alternatives, the tangible and intangible benefits, and the results of the analysis. Broadly, a cost-benefit analysis has two purposes: to determine if an initiative is a sound investment/decision (justification/feasibility); and to provide a basis for comparing projects (Mishan & Quah, 2007; Posner, 2000)

Healthcare costs associated with clinical practice, efficiency and accountability, as well as the implementation of interventions (the three frameworks), can impose a significant financial challenge to healthcare organisations. Economic evaluation utilises a systematic framework to assess the cost and benefits of implementing interventions to achieve set goals (Mumford et al., 2013).

SIQNS Framework

The SIQNS framework, developed by (Mumford et al., 2013), was adapted and used to represent how this economic evaluation was undertaken, highlighting the five distinct steps in this model, which include: the scope and objectives; the identification of costs and benefits; quantifying costs and benefits; calculating the internal rate of return and the benefit-cost ratio; and conducting a sensitivity analysis (Figure 7).

The main purpose of the SIQNS framework is to add structure to the methods of undertaking an economic evaluation (Mumford et al., 2013).

I now proceed to highlight how each step of the five steps of the SIQNS framework was undertaken.

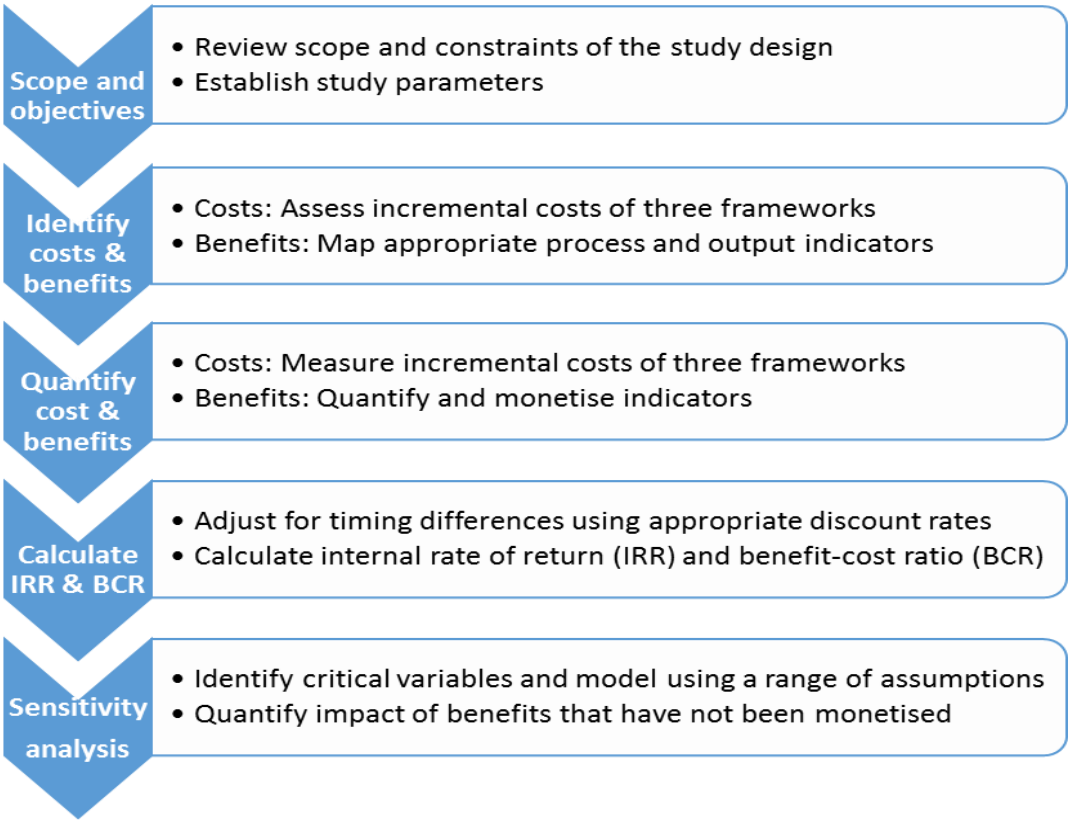

Figure 7. SIQNS framework. Adapted from "Economic Evaluation of Australian Acute Care Accreditation (ACCREDIT-CBA [Acute]): Study Protocol for a Mixed-Method Research Project," by Mumford et al., 2013, *BMJ Open, 3*(2), p. 2. Copyright 2013 by BMJ Open.

Scope and objectives

The first activity undertaken was to determine the scope of the study consisting of a quantitative retrospective longitudinal analysis and evaluation over the past 10 years (2005–15) of the implementation of the Balanced Scorecard. It also examined and evaluated the implementation of the Magnet Recognition Program® (2011–13), and prospectively, it studied the implementation of a revenue cycle management program (2014–15).

Study timelines

The study analysed the past ten years (2005–15) of the implementation of the Balanced Scorecard (BSC), implemented in 2005 (Kaplan & Norton, 1996a). The base year for the BSC was 2004 and the reporting years were 2005–10.

The Magnet Recognition Program® (MRP), implemented in 2011 (ANCC, 1994). The base year for the MRP was 2010 and the reporting years were 2011–13.

The revenue cycle management program (RCM), implemented in 2014. The base year for the RCM was 2013 and the reporting years were 2014–15.

Each of the three frameworks in this study was analysed from the year that the framework was first implemented until the next framework was initiated to determine their individual, as well as their cumulative impact, over the 10-year time frame. Figure 8 depicts the other frameworks and their base and reporting years since their implementation.

The combined impact of the three frameworks was then calculated by obtaining the mean of each of the indicators and comparing them to the relevant indicators' mean of 2004 (pre-intervention base year).

Figure 8. Base and reporting years for the three frameworks.

Building logic models

Logic models were designed to depict each of the three frameworks in terms of the goals, rationales, assumptions, resources required, activities, inputs, outcomes and long-term desired impact. Logic models are useful for planning, implementing and evaluating a framework, intervention or initiative, and provide a common reference point for all involved. Logic models

were used to describe the logical linkages between the three frameworks' resources, activities, outputs, outcomes and impacts (McLaughlin & Jordan, 1999). These logic models are depicted in figures 9, 10 and 11 and are individually presented to provide an overall description of the problem, the goal desired, the rationale and assumptions of each of the frameworks implemented and evaluated. More importantly, the outcomes indicators within the models were incorporated into all the Hospital's units and departments Balanced Scorecard strategic and operational plans as part of all of the three frameworks desired outcome measures, (detailed in Appendix N, p. 309).

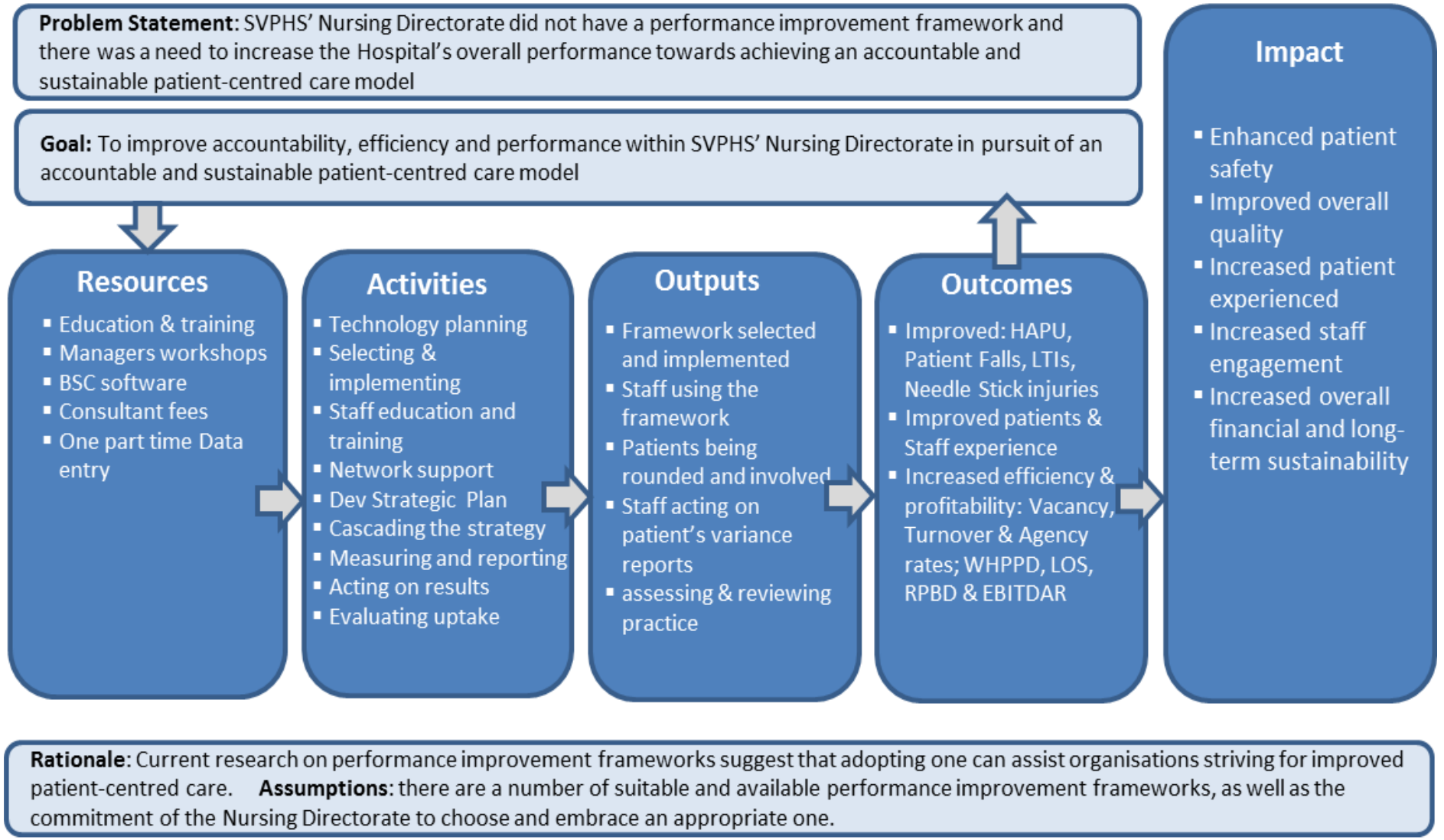

Figure 9. Logic model for the Balanced Scorecard

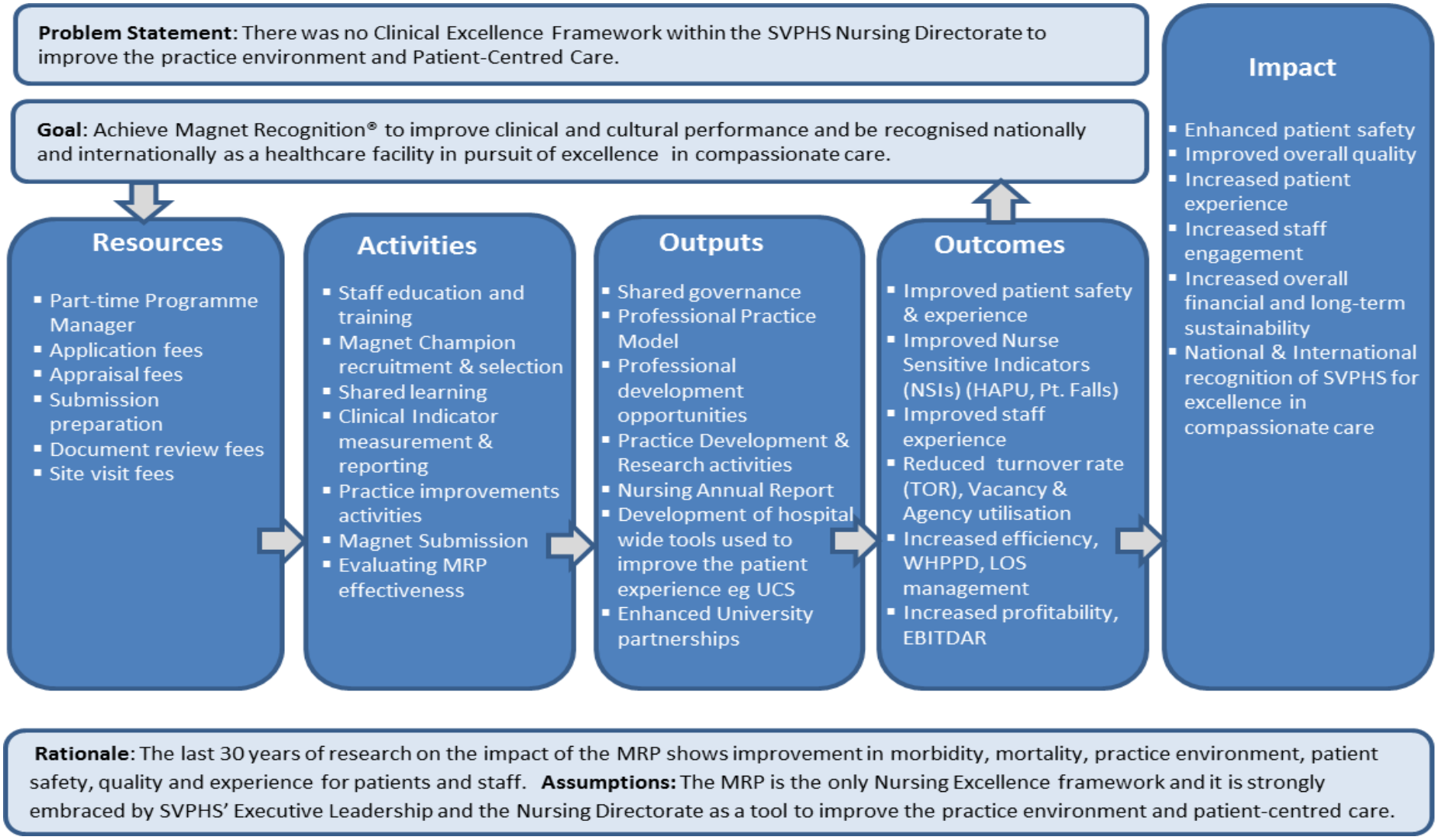

Figure 10. Logic Model for the Magnet Recognition Program®

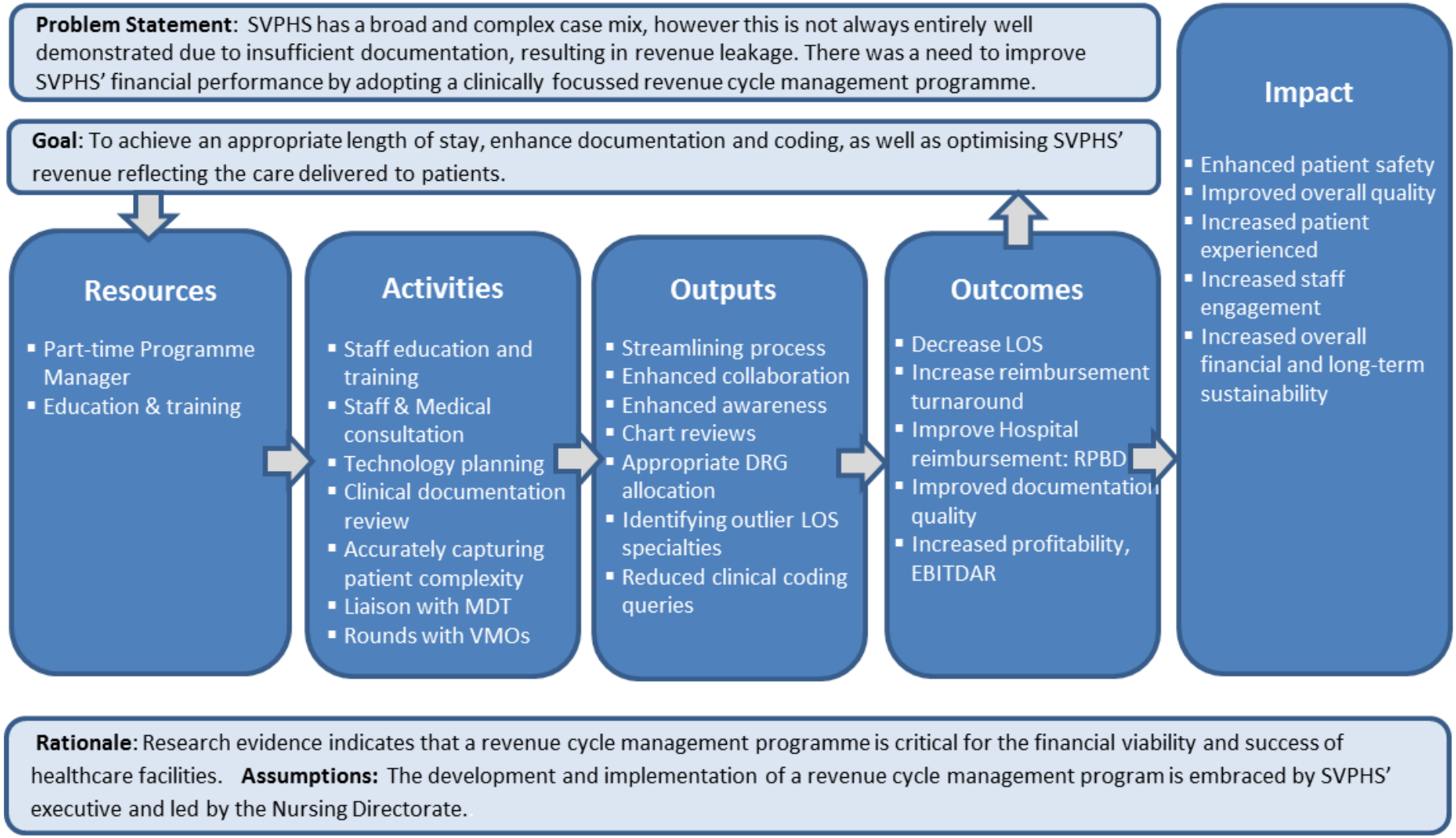

Figure 11. Logic Model for the Revenue Cycle Management program

Identifying databases

The cost-benefit analysis research activities involved a combination of document analysis of quality and safety data, human resources data, all inpatient admissions and staff (clinical, support and administrative) satisfaction surveys, engagement and experience data, as well as efficiency and financial performance data from 2005 to 2015 with the pre-intervention data in year 2004.

Data were extracted from key extant databases, both clinical and financial, to address three key areas of the Hospital's performance from 2005 to 2015. The first area examined was quality and safety, which included records of all documented inpatients' falls with injury and hospital-acquired pressure ulcers. Also within this area, needlestick injuries and lost-time injury frequency rates were studied to highlight that safety and quality also apply to the Hospital to maintain it as a safe workplace. The second area was patients' experience/satisfaction, which included Press Ganey's patient experience data. (Press Ganey is an international firm that conducts surveys of patients from a very large sample of healthcare facilities.) Staff experience/engagement data was gathered from our "Best Practice Australia" staff surveys (a validated tool used to benchmark hospitals across Australia and the Asia–Pacific region). The third area examined related to human resources indicators, such as vacancy rates, turnover rates, overtime and agency utilisation. The fourth area investigated related to efficiency, financial performance and sustainability, which included length of stay (LOS) data, coding data, work hours per patient day (WHPPD), revenue per bed day (RPBD), and earnings before interest, tax, depreciation, amortisation and rent (EBITDAR) data.

Table 3 depicts the outcome indicators extracted from the logic models which are routinely measured and reported within all units and departments in the Hospital. These indicators are also part of the strategic and operational plans of these units and departments.

Table 3

Outcome Indicators

Quality & Safety	Patients & Staff cultural surveys	Human Resources	Efficiency /Financial performance
Patient falls	Patient Satisfaction/experience	Vacancy rates	Work hours per patient day (WHPPD)
Hospital-acquired pressure ulcers	Staff experience/engagement	Turnover rates	Patients' length of stay (LOS)
Needlestick injuries		Agency utilisation	Revenue per bed day (RBPD)
Lost-time injuries			Earnings before interest, tax, depreciation, amortisation and rent (EBITDAR)

A cost-benefit analysis was used in this study to examine structural variables described as hospital characteristics of Magnet-designated facilities for the period 2005–15. These included patient satisfaction/experience, mean scores and percentile rank compared to existing Australian national databases. Similarly, this process was used to examine staff engagement levels, nurse-sensitive indicators and the other efficiency and financial indicators described above. These were trended and benchmarked against the Australian Council on Healthcare Standards for quality and safety indicators; Best Practice Australia for staff engagement indicators; and to Press Ganey for patient satisfaction/experience scores. Equally, the above process was utilised to determine the Balanced Scorecard and the revenue cycle management's impact on the trended data.

The impact of the implementation of the Balanced Scorecard was derived by obtaining the Hospitals' mean scores of the indicators identified above over the period 2005 to 2010 and comparing those to the Hospital's pre-intervention year 2004. Mean scores reflect performance outcomes as a result of variations in clinical practice, the introduction of performance

improvement and accountability initiatives as well as cultural changes over time (Langley et al., 2009; Pickton, Starkey, & Bradford, 1996). I acknowledge that changes in mean performance scores achieved at the Hospital cannot be entirely or exclusively attributed to implementing these frameworks. However, one can draw inferences from extrapolating the impact of these frameworks on an organisation's performance (Davis & Albright, 2004; De Geuser, Mooraj, & Oyon, 2009).

For the implementation of the Magnet Recognition Program®, the mean scores for the years 2011 to 2013 were calculated and compared to the mean scores achieved in the period 2005-2010. For the revenue cycle management program, the mean scores were calculated for the 2014–15 period and contrasted to the means scores achieved for the 2011–13 period. The percentage variations of all the indicators identified were obtained thus indicating the magnitude of change as a possible outcome of the introduction of these frameworks. Annotated time line series were generated, which highlighted trend lines, mean scores, and one standard deviation above and below the mean. When available, these were measured against the national benchmarking dataset by the Australian Council on Healthcare Standards (one of Australia's peak governance and accreditation bodies for health care). Results were provided both in relative terms (percentage), as well as in absolute (numbers and monetary) terms.

The cost-benefit analysis also examined efficiency and financial indicators such as work hours per patient days (WHPPD), average length of stay (LOS), revenue per bed day (RPBD) and, earnings before interest, tax, depreciation, amortisation and rent (EBITDAR).

Individual graphical representations of these indicators were generated for each of the three frameworks as well as being aggregated over the 2004 to 2015 period.

Given that the revenue cycle management program was introduced in 2014, only data for 2014 and 2015 was available and presented for the following indicators: average length of stay

(LOS); revenue per bed day (RPBD); and earnings before interest, tax, depreciation, amortisation and rent (EBITDAR).

Identification of costs and benefits

The logic models above were used to identify the costs and expected benefits of each of the frameworks and were identified as follows:

Table 4

Identified Costs

Balanced Scorecard	Magnet Recognition Program®	Revenue Cycle Management Programme
Education & Training Managers workshops Software Consultant Fees Data entry	Program Manager Application fees Appraisal fees Document review fees Site visit Documentation preparation	Program Manager Education & training

The costs displayed above were also shown in the literature related to the implementation of both the Balanced Scorecard (Hoque, 2014) and the Magnet Recognition Program® (ANCC, 2010).

The expected benefits of the three frameworks were also extracted from the respective logic models and classified within quality and safety, human resources, efficiency, and financial and intangibles benefits/outcomes. The relevance of the above benefits and outcome indicators as they relate to the each of the frameworks is as follows:

Table 5

Identified Benefits

Clinical, Cultural & Financial	Balanced Scorecard	Magnet Recognition Program®	Revenue Cycle Management
Quality & Safety	Hospital Acquired Pressure Ulcers Patient Falls Needle Stick Injuries Lost Time Injures	Hospital Acquired Pressure Ulcers Patient Falls Needle Stick Injuries Lost Time Injures	
Human Resources	RN Vacancy rates Overtime Agency utilisation Turnover	RN Vacancy rates Overtime Agency utilisation Turnover Marketing/advertising	
Efficiency & Financia	Work hours per patient day Length of Stay Revenue per bed day EBITDAR	Work hours per patient day Length of Stay Revenue per bed day EBITDAR	Length of Stay Revenue per bed day EBITDAR
Intangibles	Patient Satisfaction with Nursing Staff Engagement Scores	Patient Satisfaction with Nursing Staff Engagement Scores	Patient Satisfaction with Nursing Staff Engagement Scores

Table 6

Linking Resources and Activities with Outcomes and Framework

Clinical, Cultural & Financial	Resources	Activity	Process (Lead) indicator	Outcome (Lag) Indicators	Intervention
Quality & Safety	Magnet Champions	Hourly rounding	PUPA (pressure ulcer prevalence audit)	Pressure Ulcers	BSC, MRP
		Risk Assessment	% of patients risk assessment for ulcers		
	Safety associates	Risk assessmnet	% of patients risk assessment for falls	Patient Falls	BSC, MRP
	ScoreTrak® (software)	Measuring & reporting	Red dot system		
	WHS associates	Education & training	Protective apparel compliance	Needle Stick Injuries	BSC, MRP
	WHS associates	Hazard audits	IMMEX OHS referral rate	Lost Time Injures	BSC, MRP
Human Resources	Magnet Champions	Reward/recognition	Practice environment scale survey	RN vacancy rates	BSC, MRP
	NUMs/ANUMs	Casual pool growth	Best practice rostering system	Agency utilisation	BSC, MRP
	NUMs/ANUMs	Recruitment/retention	Best practice rostering system	Retention/turnover rate	BSC, MRP
Efficiency & Financial	ADONs, NUMs, ANUMs	Flexing staff up/down	Best practice rostering	Work hour per patient day	BSC, MRP
	RCM Manager	Rounding with VMOs	Predictive discharge rate	Length of Stay	RCM
	RCM Manager	Coding	Documentation compliance rate	Revenue per bed day	RCM
	ADONs, NUMs, ANUMs	Adjusting resources daily to meet demand	Weekly forecasting rate	%EBITDAR	BSC, MRP, RCM

NUMs: Nurse Unit Managers - ANUMs: Associate Nurse Unit Manager – ADONs: Assistant Director of Nursing - WHS: Work Health & Safety

To highlight the rationale and relationship between the framework (that is the Balanced Scorecard) and the indicator (for example, patient falls) prior to the implementation of the Balanced Scorecard, whilst the Hospital had been collecting outcomes (lag) indicators for many years, the Hospital did not have a structured process (the BSC) to track, report, analyse and act on the performance of these indicators. With the Balanced Scorecard, for each of the indicators chosen to improve safety and quality (for example, patient falls), a lead (process) indicator (red dot system to prevent patient falls) was put in place for each of the lag indicators measured. These compliance or process indicators began to be measured to ensure an improvement with the outcome (lag) indicators measured. This approach was replicated for all of the outcome indicators pertaining to each of the three frameworks as per Table 6 (previous page).

With the introduction of the Balanced Scorecard, all of these indicators began to be collected and reported by each individual clinical unit and department. The desired impact of this initiative was to focus clinical and managerial staff on improving all of the specified areas according to the four perspectives of the Balanced Scorecard (customer, internal processes, people and financial). This newly introduced (2005) management system was designed to improve accountability and performance of the nursing division and to have a positive impact on the overall clinical governance and performance of the Hospital.

As stated earlier, the adoption of the Magnet Recognition Program® was intended to continue the focus on improving the practice environment (culture), provide greater nursing autonomy and accountability with the aim of improving quality and safety through enhancing the nurse-sensitive indicators (for example, pressure ulcers and patient falls), and increase staff engagement levels and patient experience within a patient-centred care model.

The literature on Magnet Recognition indicated the following expected benefits:

Table 7

Evidence of Tangible Benefits of the Magnet Recognition Program®

Reducing hospital-acquired pressure ulcers	(Berquist-Beringer, Davidson, Agosto, Linde, & al, 2009; Goode et al., 2011; Rosemberg, 2009)
Decreasing patient falls	(Bates, Pruess, & Platt, 1995; Dunton, Gajewski, Klaus, & Pierson, 2007; Nurmi & Lüthje, 2002)
Improving patients' safety and improved quality	(Armstrong & Laschinger, 2006; Armstrong et al., 2009; Hines & Yu, 2009; Stone et al., 2007)
Increasing registered nurses' retention and lower nurse burnout	(Aiken, Sochalski, & Lake, 1997)
Reducing registered nurse vacancy rates and registered nurse turnover rates	(Jones & Gates, 2007; Upenieks, 2003)
Reducing registered nurse agency utilisation rates	Upenieks (2003)
Decreasing nurse musculoskeletal and other injuries	(Stone & Gershon, 2006)
Reducing staff needlestick rates	(Clarke, Sloane, & Aiken, 2002; Jagger, Hunt, & Perason, 1990)

The intangible impact of implementing the Balanced Scorecard and the Magnet Recognition Program®, supported by peer-reviewed literature (Drenkard, 2010a) and examined in this study were:

Table 8

Evidence of Intangible Benefits of the Magnet Recognition Program®

Overall patient satisfaction with nursing mean scores	(Gardner, Fogg, Thomas-Hawkins, & Latham, 2007)
Registered nurses' satisfaction	(Brady-Schwartz, 2005; Laschinger et al., 2002; Smith, 2014; Waldman, Kelly, Aurora, & Smith, 2004)
Opportunity and encouragement for professional development; effective use of staff and resources; high levels of job satisfaction; clinical autonomy and responsibility; participatory decision-making; strong nurse leaders; two-way communication with staff; and strengthening community involvement	(Aiken, Sochalski, et al., 1997; Armstrong & Laschinger, 2006; Armstrong et al., 2009; Drenkard, 2010a)

Quantification of costs and benefits

A mix of micro-costing (involving the collection of detailed data for both the quantity of resources and the value of those resources), gross-costing (assigning average costs of events using regional or national data) and the Hospital's average costing approaches were utilised in the identification of costs and benefits associated with these frameworks. The approach used to quantify the costs of implementing the three improvement frameworks (in Table 4, p.84) was micro-costing, where the quantity and the value could be quantified.

Oncosts, including leave provisions, penalty rates, superannuation and workers' compensation expenses were included in the salary costs of managers of both the Magnet Recognition and the revenue cycle management programs. The percentage oncost added to the managers' salary expenses was 30 per cent of their negotiated salary. Overheads included BSC software licensing fees; MRP's application, appraisal, documentation review and visit fees, where all were identified and reported as fixed costs in the costs associated with implementing these improvement frameworks.

With the Balanced Scorecard, there are no annual consultancy costs as this was a one-off set-up cost only. Education and training, managers' workshops, software licensing and data entry are an annual cost to the Hospital. With the Magnet Recognition Program®, the program manager is an ongoing annual cost and all the other costs are incurred every four years. Therefore, one fourth of these costs is incurred each year. With the revenue management program, the program manager is an annual and ongoing cost and the education and training is reduced from the initial set-up cost to a lower annual recurrent cost to the Hospital.

In relation to the costs associated with incurring (or benefits of not incurring) a patient falls, pressure ulcers and needlestick injuries were identified through research studies using a gross-costing (average costing) approach (depicted in table 9).

Table 9 illustrates the costing approach used for the various indicators collected. Gross costing was used for assigning costs to hospital-acquired ulcers, patient falls and needlestick injuries. St Vincent's Private Hospital's average costing approach was used to determine the costs associated with RN vacancy, turnover rates, agency utilisation, work hours per patient days (WHPPD), length of stay (LOS), revenue per bed day (RPBD) and earnings before interest, tax, depreciation, amortisation and rent (EBITDAR).

Table 9

Costing Approach of Benefit/Outcomes

Clinical, Cultural & Financial	Indicators	Costing approach
Quality & Safety	Hospital Acquired Pressure Ulcers	Gross-costing
	Patient Falls	Gross-costing
	Needle Stick Injuries	Gross-costing
	Lost Time Injures	SVPHS average costing
Human Resources	RN vacancy rates	SVPHS average costing
	Agency utilisation	SVPHS average costing
	Turnover rate	SVPHS average costing
Efficiency & Financia	Work hour per patient day	SVPHS average costing
	Length of Stay	SVPHS average costing
	Revenue per bed day	SVPHS average costing
	%EBITDAR	SVPHS average costing

Tables 10 and 11 below depict the costs and benefits that were monetised and adjusted for health related inflation (2015 Consumer Price Index of an average of 5% according to the Australian Bureau of Statistics) to the 2015 reference year in which the analysis was conducted. All monetised benefits are expressed in Australian dollars and in Table 11, they reflect the per-unit dollar benefit of these indicators (that is 1% earnings before interest, tax, depreciation,

amortisation and rent equals $1.5 million; and, one nursing-worked hour per patient day equals $5 million. This is similar to the Hospital's overall cost of a worked hour per patient day.

The intangible indicators of patient experience and staff engagement were not quantified in monetary terms; however, they provide a measure of cultural engagement, as well as describing a clinical and cultural milieu that may contribute towards the vision of achieving an accountable and sustainable patient-centred care model.

Table 10

Monetised Value of Benefits at a Per Unit in Australian Dollars

Clinical, Cultural & Financial	Balanced Scorecard	Benefit in $ per unit/case	Magnet Recognition Program®	Benefit in $ per unit/case	Revenue Cycle Management	Benefit in $ per unit/case
Quality & Safety	Hospital Acquired Pressure Ulcers Patient Falls Needle Stick Injuries Lost Time Injures	$9,855 $6,669 $943 $1,000	Hospital Acquired Pressure Ulcers Patient Falls Needle Stick Injuries Lost Time Injures	$9,855 $6,669 $943 $1,000		
Human Resources	RN vacancy rates, agency utilisation & turnover rate	$56,317	RN vacancy rates, Agency utilisation & Turnover rate	$56,317		
Efficiency & Financial	Work hour per patient day Length of Stay Revenue per bed day %EBITDAR	$5,000,000 $910 $10.22 $1,500,000	Work hour per patient day Length of Stay Revenue per bed day %EBITDAR	$5,000,000 $910 $10.22 $1,500,000	Work hour per patient day Length of Stay Revenue per bed day %EBITDAR	$5,000,000 $910 $10.22 $1,500,000
Intangibles	Patient Satisfaction with Nursing Staff Engagement Scores	N/A N/A	Patient Satisfaction with Nursing Staff Engagement Scores	N/A N/A	Patient Satisfaction with Nursing Staff Engagement Scores	N/A N/A

Table 11

Indicators Dollar Value, Relationship with Intervention and Source of Evidence

Indicators	Intervention	AU$ Cost of indicator	Indicator relationship with intervention	Source
Pressure ulcers	BSC and MRP	$9,855	Nurse sensitive indicator measured by the BSC and MRP	Weighted average derived in 2012 and adjusted for inflation (5%) Nguyen, Chaboyer, and Whitty (2015)
Patient falls	BSC and MRP	$6,669	Nurse-sensitive indicator measured by the BSC and MRP	Morello et al. (2015)
Needlestick injuries	BSC and MRP	$943	Safety indicator measured by BSC and MRP	Adjusted for inflation (5%) Dickinson (2002)
Lost-time injuries (LTI)	BSC and MRP	$1,000	Safety indicator measured by BSC and MRP	SVPHS actual cost of average LTI in 2015
RN vacancy rates, agency utilisation and turnover rate	BSC and MRP	$56,317	Efficiency indicator measured by the BSC and MRP	SVPHS actual cost of the impact of these indicators 2015
Nursing work hour per patient day (WHPPD)	BSC and MRP	$5,000,000	Efficiency indicator measured by the BSC and MRP	SVPHS actual cost of the impact of these indicators 2015
Length of stay (LOS)	RCM	$910	Efficiency indicator measured by the RCM	SVPHS estimated cost of the impact of LOS per admission in 2015
Revenue per bed day (RPBD)	RCM	$10.22	Efficiency indicator measured by the RCM	SVPHS estimated $ value increase in RPBD in 2015

Pressure ulcer indicator

The costs of hospital-acquired pressure ulcers were adopted from the *Pressure Injury in Australian Public Hospitals* study undertaken by Nguyen et al. (2015). The reported mean cost of pressure injury (weighted average) calculated in 2012 of $8,513.30 was adopted and adjusted for the recommended Australian health inflation rate of 5% for 2013–15, yielding a cost of $9,855 per hospital-acquired pressure ulcers.

Pressure ulcers are a nurse-sensitive indicator (ANCC 2010) given that nurses are ultimately responsible for providing the appropriate care to prevent these from occurring. Pressure ulcers are a quality and safety indicator that had been measured by the Hospital for many years. It was included in the Balanced Scorecard in 2005 and has been measured and reported since then. It was also a reportable indicator in the Magnet Recognition Program®. In addition, a process measure (lead indicator – percentage of patients risk assessed for pressure ulcers) was introduced (measured monthly) along with a twice a year pressure ulcer prevalence audit (PUPA) to enhance focus on this important indicator.

Patient falls indicator

The cost of patient falls was adopted from a cost of falls study conducted by Morello et al. (2015), which investigated the extra resource burden of in-hospital falls. This study reported a mean increase in length of stay of eight days and an additional hospital cost of $6,669 for patients sustaining an in-hospital fall. The reported cost of $6,669 was assumed to have been adjusted to the published 2015 year.

As per pressure ulcers, patient falls are also a quality and safety indicator that was included in the Balanced Scorecard in 2005 and have been measured and reported since then and are also a focus of the Magnet Recognition Program® reportable indicator.

Needlestick injuries indicator

The cost of needlestick injuries was adopted from the 2002 supplementary submission to the Senate community affairs reference committee inquiry into nursing. This report focused on reducing needlestick injury in Australian hospitals through the use of safety engineered products. The report estimated in 2002 an average cost of $500 per needlestick injury. This cost was also adjusted for healthcare inflation for the years 2013–15, yielding a cost of $943. This indicator is associated with the Balanced Scorecard as a safety indicator that has been monitored and reported since 2005. It is also a key indicator within the Magnet Recognition Program®.

Lost-time injuries indicator

The cost of lost-time injuries was calculated from St Vincent's Private Hospital's actual history of claims and yielded an average of $1,000 per lost-time injury. As per the indicators above, the same principle applies for the lost-time injury indicator's association with the Balanced Scorecard and Magnet Recognition Program®.

Registered nurses vacancy rates, agency utilisation and turnover rates

The cost of registered nurses' vacancy rates, agency utilisation and turnover rate was estimated from the pre-intervention year 2004 of registered nurses' vacancies. A reduction in the registered nurses' vacancy rate post-intervention was calculated and subtracted from the number of direct-care RN full-time equivalent employed. The number of RN full-time equivalents was then converted into nursing hours and multiplied by the actual premium differential between the average registered nurse ordinary cost per hour and the average overtime and agency hourly rate.

For example, a 5% reduction in vacancies from a total of 500 full-time equivalents (FTEs) yields 25 FTEs. Twenty-five FTEs are then multiplied by 1 FTE (1,976 hours), yielding a total

of 49,400 hours, which is then multiplied by the premium average for agency and overtime rates ($25 hourly rate), giving a total of $1,235,000. This calculation was undertaken for each year and adjusted to the 2015 reference year.

The costs associated with human resources indicators are a major potential source of efficiency and productivity gains by healthcare facilities. Therefore, striving for greater accountability and performance by implementing a performance improvement tool, such as the Balanced Scorecard and a clinical excellence framework such as the Magnet Recognition Program, may assist with the performance of these indicators.

Nursing work hours per patient day (NWHPPD)

Nursing work hours per patient day (an efficiency measure) has a major impact on the utilisation of human resources and the financial performance of the Hospital. One nursing worked hour per patient day equates to $5 million per year (total nursing salaries and wages $61.5 million/year with a budgeted 12.3 work hours per patient day). This indicator is included in the cost-benefit analysis to show how it may have contributed to the changes in earnings before interest, tax, depreciation, amortisation and rent (EBITDAR) achieved by the Hospital.

Average length of stay (ALOS)

The average length of stay is a key indicator to measure the impact of the revenue cycle management program. The opportunity cost of a reduction in the average length of stay emanates from the Hospital's capacity to free-up resources (labour and capital), as well as backfilling the increased bed capacity with additional demand at a higher rate. This occurs as the initial days in hospital are loaded (theatre fees and advanced surgical accommodation rates) in terms of funding reimbursement, with decreases in the tail of the inpatient episode of care (lower surgical and medical accommodation rates).

In this study, a reduction in length of stay was calculated by the actual additional admissions per year gained by freeing-up bed capacity. This estimate was conservative in the amount of average revenue per admission applied (this is also impacted by changes in the casemix and payment system [per-diem and episodic payment] experienced by the Hospital at the time).

The number of overnight admissions in 2014 was multiplied by the reduction in the overnight average length of stay (2005–15). The number of bed days freed-up was then converted into admissions (by dividing the capacity freed-up by the newly achieved overnight average length of stay). This number was then multiplied by the average overnight occupancy rate achieved in 2015 and then multiplied by the average dollar profit margin ($EBITDAR) per admission achieved for 2015 (as follows):

ALOS Savings = [(Number of O/N admissions x reduction in O/N ALOS) x %O/N Occup] x $EBITDAR per Adm

Revenue per bed day (RPBD)

The revenue per bed day was the second key indicator used to measure the impact of the revenue cycle management program. The revenue per bed day was calculated by subtracting the actual rate achieved in 2015 minus the rate achieved in 2014 (adjusted for health inflation). This change in revenue per bed day was then multiplied by the number actual bed days achieved in 2015 and then multiplied by the average percentage profit margin (EBITDAR) achieved for 2015 (as follows):

RPBD Savings = (Increased RPBD x actual total patient days) x %EBITDAR

Calculation of return of investment (ROI), net present value (NPV), internal rate of return (IRR) and benefit-cost ratio (BCR)

The cost-benefit analysis consisted of calculating the return on investment (ROI), the net present value (NPV), the internal rate of return (IRR), and the benefit-cost ratio (BCR) (the most commonly used profitability ratio) of the introduction of these frameworks, which is represented by:

Return on Investment (ROI)

I. **ROI =** $\frac{\text{(Gain from Investment – Cost of Investment)}}{\text{Cost of Investment}}$

II. **Net Present value (NPV)** – an indicator of the value or magnitude of an investment (Ross, 1995).

$$\text{NPV} = \sum_{t=1}^{T} \frac{C_t}{(1+r)^t} - C_o$$

Equation II, where: **Ct** is the net cash inflow during the period **t**; **Co** is the total initial investment costs; **r** is the discount rate used; and **t** is the number of time periods.

III. **Internal Rate of Return (IRR)** – an indicator of the efficiency, quality, or yield of an investment. The internal rate of return (IRR) is the rate of return which makes the net present value (NPV) of cash flows zero (Mishan & Quah, 2007).

$$\text{NPV} = \sum_{n=0}^{N} \frac{C_n}{(1+r)^n} = 0$$

Equation III: ***N*** is the total number of periods; ***C*** is the cash flow; ***n*** is a positive integer; ***r*** is the discount rate.

IV. **Benefit-Cost Ratio (BCR)** = (Net Present Value of benefits)
(Net Present Value of costs)

$$BCR = \frac{NPV = \sum_{0}^{t} \left(\frac{Bt}{(1+r)t} \right)}{NPV = \sum_{0}^{t} \left(\frac{Ct}{(1+r)t} \right)}$$

Equation IV: ***Bt*** is the sum of benefits in year ***t***; ***Ct*** is the sum of costs in year ***t***; ***r*** is the discount rate; and ***t*** is the expected time horizon in years.

Given the long time frame of this study (10 years) the rate of time preference or discount rate chosen is critical (Drummond et al., 2015; Harrison, 2010). However, there is little agreement about what is the appropriate discount rate to use (Harrison, 2010). Within Australia, the choice of discount rate is best addressed by following the guidance of the Office of Best Practice Regulation, which suggests using a real discount rate of 5–7% (Australian Government, 2007). It is also suggested to use in most cases the same discount rate applying to both costs and benefits (outcomes) and keep the discount rate constant over time (Parkinson & De Abreau Lourenco, 2015). In this study, and based on the above advice, a 5% discount rate was used and applied to both costs and benefits in the cost-benefit analysis.

Sensitivity analysis

A sensitivity analysis is an essential component of a cost-benefit analysis. Its purpose is to describe the impact of changes in assumptions and variables within the model. The cost-benefit analysis may be impacted by the relative baseline of the healthcare facility at the introduction time of these frameworks. For example, if the organisation's quality and safety, efficiency and financial indicators are all above the mean of the national benchmarking dataset, whilst there is

still scope for continuous improvement, these may be harder to realise and be at the margin and/or constitute modest gains. Conversely, the lower the starting point, the greater scope there is to achieve significant benefits in performance.

In order to ascertain the sensitivity of the performance indicators chosen for this cost-benefit analysis, the net present value, internal rate of return and the benefit-cost ratio were recalculated for a range of values from ±1%, 5%, 10%, 20% and 30% of the total values for each of the benefits and costs that exceeded 10% of the total's values included in the model. Additionally, the internal rate of return was re-calculated with discount rates ±2%, 5% and 10% from the base discount rates used to ascertain the duration sensitivity of the model.

Ethical considerations

The study was approved by the University of Tasmania's Human Research and Ethics Committee and St Vincent's Private Hospital Sydney's Practice Development and Research Council.

Qualitative Component

Research design

This component of the research was comprised of a qualitative study consisting of semi-structured interviews and focus groups of clinical and managerial staff.

Method

A number of questions related to the Hospital's processes and systems such as the Balanced Scorecard, the Magnet Recognition Program®, the revenue cycle management program and the prevailing patient-centred care model were developed. Participants were asked these questions to ascertain their views on the impact, if any, of these frameworks on the Hospital's quality and safety agenda, patient satisfaction and staff experience as well as its financial performance.

In order to minimise the introduction of bias, my supervisory team and I decided that the interviews and focus groups would best be conducted by someone at arm's length to the staff. Therefore, we employed a research assistant not in a position of authority within the Hospital to conduct and record the interviews and focus groups. The recordings were then professionally transcribed and I undertook all the analysis of the transcriptions.

Participants and recruitment

Participants were recruited through a general expression of interest communication (Appendix J, p. 300), as well as from information sessions conducted by the student researcher's supervisors. The qualitative component's aim and methods were explained to facilitate the recruitment of participants. Information about the qualitative component was also disseminated by using posters (Appendix I, p. 299), emails and general gatherings of the Nursing Directorate. Interested individuals were asked to contact the primary supervisor by phone or email.

Following the initial contact, further information was provided to potential participants about the semi-structured interviews and focus groups (appendices J, p. 300 and K, p. 302).

All participants were contacted prior to their interviews and focus groups and were provided with an informed consent form (Appendix M, p. 307). This consent form was designed to ensure that participants understood the format and aims of the qualitative component of the study, their rights as participants, and to confirm their willingness to be part of the study.

Participants were told that they could withdraw from the study during or after the semi-structured interviews or focus groups if they wished to do so without affecting the relationship with other staff, the student researcher or the Hospital. Participants were also assured of privacy and confidentiality.

The expression of interest aimed at capturing a representative cohort of registered nurses from all the clinical areas within the Hospital including medical, surgical, intensive care, operating theatres and clinical support areas.

The study consisted of nine semi-structured interviews of nursing unit managers and associate nursing unit managers from clinical and support areas of the Hospital. Nursing unit managers are considered the most critical human resource impacting on the provision and delivery of inpatient quality and safe health care (Duffield, Roche, O'Brien-Pallas, Catling-Paull, & King, 2009; Evans, 1994; McGuire & Kennerly, 2006).

Two focus groups were conducted. Focus group 1 consisted of an assistant director of nursing, a clinical nurse consultant, two other senior nurse managers and two senior educators. Focus group 2 consisted of six direct-care nurses representing all the clinical areas in the Hospital.

Given the limitations of time and resources, 21 participants were deemed appropriate for this qualitative study as higher numbers would have reached saturation and a point of diminishing returns (Ritchie, Lewis, & Elam, 2003).

Interviews with a relatively small number of key participants have been assessed as appropriate for a qualitative study (Bertaux, 1981) and 15 is the smallest sample size (Guest, Bunce, & Johnson, 2006).

Data collection

As mentioned previously, an independent research assistant was engaged to undertake this task in order to minimise any potential bias in the collection of these data.

All semi-structured interviews and focus groups were recorded by the research assistant and professionally transcribed. I then reviewed the recordings and the transcripts to ensure their accuracy and these were made available to participants upon request. However, no requests were received.

Data analysis

The data obtained from the two focus groups and the nine semi-structured interviews were analysed using a combination of Braun and Clarke's six phases of thematic content analysis (Braun & Clarke, 2006) and Saldana's first and second cycle coding methods for qualitative researchers (Gibbs, 1997).

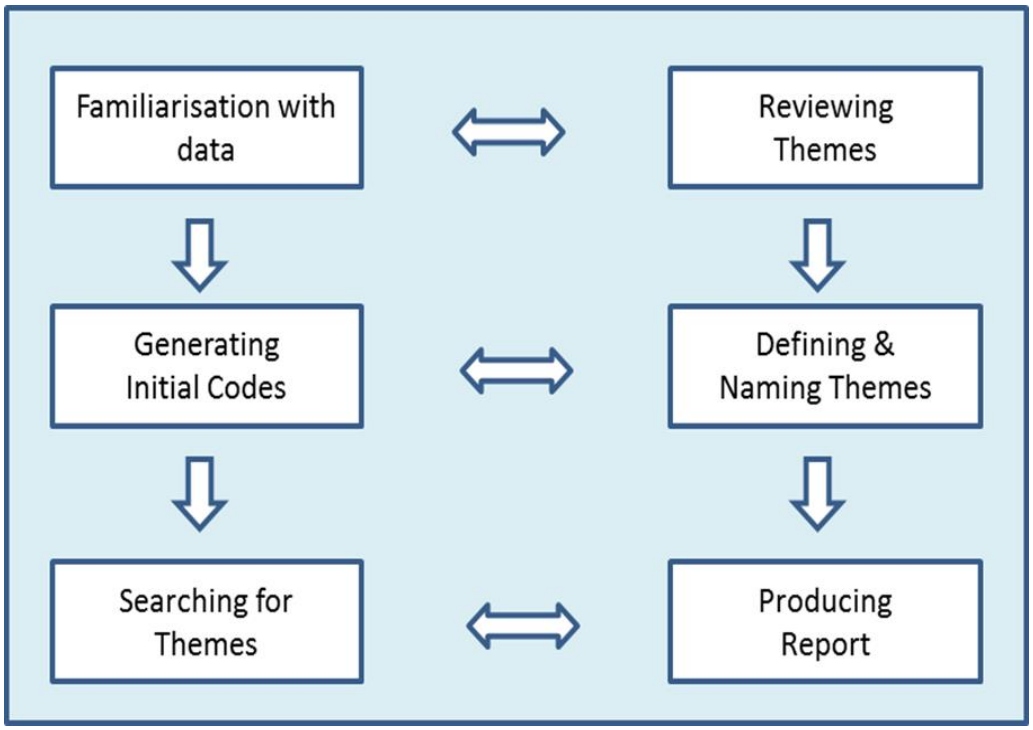

Figure 12. Phases of thematic analysis. Adapted from "Using Thematic Analysis in Psychology," by V. Braun and V. Clarke, 2006, *Qualitative Research in Psychology, 3*(2), p. 2. Copyright 2006 by the University of the West of England.

Initially, QSR NVivo 10 software was used to undertake preliminary data word frequency queries such as word counts, word clouds and word maps (Whiting, 2008). Words from the word count were tracked by the researcher and reviewed for their latent content. Latent content analysis refers to the assessment of tone and/or expressed feelings of the words (Krippendorf, 2004).

The nine semi-structured interviews were analysed first, followed by the data of the two focus groups. Each interview transcript was subject to a series of coding activities. The audio files and written transcripts were reviewed together, highlighting relevant words.

A second read of the transcripts was undertaken to highlight individual responses to each of the questions. These were collated in a matrix to provide an assessment of the responses from all of the 21 participants. A third review of the transcripts was conducted to commence the first

cycle coding utilising elemental coding methods, which included In Vivo, initial and descriptive coding (Gibbs, 1997). A fourth review of the data was conducted utilising an eclectic coding methodology.

This methodology employs a purposeful and compatible combination of two or more first-cycle coding methods and is considered appropriate for virtually all qualitative studies and in particular for relatively inexperienced qualitative researchers (Gibbs, 1997). This review generated a total of 117 codes for both interviews and focus groups.

A fifth review was undertaken in search of categories and key themes of both interviews and focus groups. A sixth and final review of the data was conducted to review, define and name the themes.

Ethical considerations

Ethics application was submitted to the Human Research Ethics Committee (Tasmania) Network, Social Science Ethics Office on 4 April 2015. Approval was granted on 29 April 2015 (Appendix H, p. 296). Specific site approval (SSA) was sought from St Vincent's Private Hospital, Sydney on 30 April 2015. Approval was granted on 26 May 2015 (Appendix H, p. 298).

Chapter 4

Quantitative Component

The quantitative component of the study was undertaken to explore and quantify the impact, if any, that the Balanced Scorecard, the Magnet Recognition Program® and a revenue cycle management program may have had on St Vincent's Private Hospital, Sydney's overall clinical, cultural and financial performance.

This chapter comprises an economic evaluation comprising a cost-benefit analysis using Mumford's et al. (2013) SIQNS framework describing the scope and objectives of the study, identifying and quantifying the cost and benefits, calculating the cost-benefit ratio and internal rate of return of the three interventions, as well as conducting a sensitivity analysis. The chapter also highlights the limitations of the quantitative component of the study and it concludes with a summary of the findings.

Scope and Objectives

A quantitative retrospective 10-years longitudinal analysis and evaluation was undertaken of the Balanced Scorecard for the period (2005–10) of its implementation at the Hospital. An examination and evaluation of the implementation of the Magnet Recognition Program® for the three years (2011–13) of its implementation was also conducted, as well as studying the implementation of the revenue cycle management program for the period 2014–15.

Each of the three frameworks in this study was analysed from the year that it was first implemented until the next framework was initiated to determine their individual, as well as their cumulative impact, over the 10-year time frame. All costs were adjusted to 2015, the reference year, and the time when the study was conducted.

Logic models were used to identify and extract the resources used, the activities undertaken and the benefits/outcomes to be measured.

The cost-benefit analysis examined the impact of the three frameworks on the clinical, cultural and financial performance of the Hospital over the 2005–15 period. Indicators relating to the three frameworks were extracted from the logic models, highlighting their relationship with them. Causality, however, is difficult to demonstrate in many healthcare situations and at best it can be shown as an association or relationship between the outcome and the intervention.

Findings – Cost Analysis

Identification and quantification of costs – the Balanced Scorecard

The operational costs associated with the introduction of the Balanced Scorecard at the Hospital included a one-off education and training cost of $5,131 related to the Director of Nursing attending a three-day workshop in Melbourne, Australia, hosted by the Balanced Scorecard Collaborative. A further one-off $10,690 cost was incurred to conduct a managers' workshop for nursing unit managers, assistant directors of nursing and other senior nurses to engage, inform and up-skill the staff of the Nursing Directorate in the use of the Balanced Scorecard.

Balanced Scorecard software (ScoreTrak®) was purchased, which has a recurrent annual licence fee of $19,669. A consultant was engaged to provide training and education in the use of the software, with a one-off cost of $16,248 for a consultancy period of three months.

Data entry has an annual cost of $14,110 and this was provided by the Hospital's information technology department so that nurse managers would not be distracted from providing the required leadership in their respective clinical units and departments. Therefore, a total of $65,848 was spent on the implementation of the Balanced Scorecard as is indicated in Table 12.

Table 12

Cost of Balanced Scorecard Implementation

SVPHS	Cost to implement the Balanced Scorecard	Amount
1.1	Balanced Scorecard education and training	$5,131
1.2	Managers' workshop	$10,690
1.3	Balanced Scorecard software (recurrent)	$19,669
1.4	Consultants fees	$16,248
1.5	Data entry (recurrent)	$14,110
Total cost to implement the Balanced Scorecard		$65,848

The identified annual recurrent costs were $21,441, which consisted of $2,566 for education and training; $3,125 for managers' workshops; $7,500 for the software licence; and $8,250 for data entry (illustrated in tables 15 and 16).

Identification and quantification of costs – the Magnet Recognition Program®

The operational cost of $55,125 was associated with the Magnet Program's mandated requirement to have a nominated Magnet Program Manager. A senior registered nurse was appointed on a 0.5 full-time equivalent or 20 hours per week basis to drive and coordinate the introduction of the Magnet Recognition Program® at the Hospital. This was a recurrent annual cost that was indexed annually to reflect salary increases in line with the negotiated enterprise bargaining agreement, which was approximately 3% per year. Additional expenses included application fees of $4,410, appraisal fees of $15,855, document review fees of $6,825, site visit fee of $59,063 and a document preparation fee of $5,250. These fees totalled $146,528 in 2010 and are to be paid every four years.

Most other expenses incurred, such as Magnet champion meetings and quality and safety initiatives and activities, were, and continue to be, absorbed as integral to the routine management and provision of services within the Hospital's operational budget.

Magnet champions replaced the existing quality associates that the Hospital had in place for many years prior to the implementation of the Magnet Recognition Program®. The costs of these staff were part of the quality agenda of the Hospital and would have been incurred irrespective of the implementation of the Magnet Recognition Program®. Incidentally, sources of funding in 2009 to sponsor the Magnet Recognition Program® were obtained partly from the Hospital itself but mostly from benefaction and consultancies provided to universities and other healthcare organisations by members of the Hospital's own nursing staff.

The total operational cost associated with the introduction of the Magnet Recognition Program® at the Hospital was $146,528, with a $55,125 recurrent annual salary component and $91,403 on a four-year cycle ($22,851 per year), with an annual total cost of $77,976 as indicated in tables 13, 15 and 16.

Table 13

Cost of Magnet Recognition Program

SVPHS	Cost of Magnet Recognition Program	Amount
1.1	Magnet Program manager (recurrent)	$55,125
1.2	Magnet application fee	$4,410
1.3	Appraisal fee	$15,855
1.4	Document review fee	$6,825
1.5	Site visit fee and travel costs of appraisers	$59,063
1.6	Document preparation	$5,250
Total cost to achieve Magnet Recognition		$146,528

Identification and quantification of costs – revenue cycle management

The revenue cycle management program required the appointment of a designated senior nurse leader with extensive clinical and management experience to drive the program. This appointment was at 0.7 of a full-time equivalent, which was 28 hours per week, at an annual cost of $95,250. It also necessitated targeted education in the area of diagnosis-related groups, casemix information, health insurance contracts, and revenue cycle management with regard to all the revenue inflows and outflows, as they related to the entire patient episode of care, at a one-off cost of $9,500. The funding source of this program originated from the Hospital's desire to improve in these important operational areas and which required additional focus and resources.

The total operational cost associated with the introduction of a revenue cycle management program at the Hospital was $104,750, with an annual recurrent cost of $100,375 (salary of $95,250 and $5,125 for ongoing educational activities) as indicated in Table 14.

Table 14

Cost of Introducing a Revenue Cycle Management Program

SVPHS	Cost of introducing a revenue cycle management program	Amount
1.1	Program manager (recurrent)	$95,250
1.2	Revenue cycle management education and training	$9,500
Total cost of introducing a revenue cycle management program		$104,750

The operational costs associated with the introduction of the three frameworks at the Hospital are summarised in tables 15 and 16. Whilst the total cost of $317,126 is shown for the introduction of these frameworks, the recurrent cost of maintaining them was approximately $200,000 per year.

Table 15

Cost of Introducing the Balanced Scorecard, the Magnet Recognition Program® and the Revenue Cycle Management Program

Balanced Scorecard	Cost in $	Magnet Recognition Program®	Cost in $	Revenue Cycle Management Programme	Cost in $
Education & Training	$5,131	Program Manager	$55,125	Program Manager	$95,250
Managers workshops	$10,690	Application fees	$4,410	Education & training	$9,500
Software	$19,669	Appraisal fees	$15,855		
Consultant Fees	$16,248	Document review fees	$6,825		
Data entry	$14,110	Site visit	$59,063		
		Documentation preparation	$5,250		
Totals	**$65,848**		**$146,528**		**$104,750**
Grand total					**$317,126**

Table 16 shows the annual and ongoing costs of continuing to implement these frameworks.

Table 16

Identified Annual and Ongoing Costs of the Three Frameworks

Balanced Scorecard	Cost in $	Magnet Recognition Program®	Cost in $	Revenue Cycle Management Programme	Cost in $
Education & Training	$2,566	Program Manager	$55,125	Program Manager	$95,250
Managers workshops	$3,125	Application fees	$1,103	Education & training	$5,125
Software	$7,500	Appraisal fees	$3,964		
Consultant Fees	$0	Document review fees	$1,706		
Data entry	$8,250	Site visit	$14,766		
		Documentation preparation	$1,313		
Totals	**$21,441**		**$77,976**		**$100,375**
Grand total					**$199,791**

Findings – Benefit Analysis

Identification and quantification of benefits

The potential tangible benefits of the Balanced Scorecard and the Magnet Recognition Program® are associated with reductions in the following areas: hospital-acquired pressure ulcers [HAPU]; patient falls; needlestick and manual handling injuries; vacancy and turnover rates; agency utilisation rates; and efficiency measures such as work hours per patient day. However, during the past 10 years, there has been a concerted effort by the Australian Council on Healthcare Standards (ACHS), the Clinical Excellence Commission (CEC) and the Australian Commission on Safety and Quality in Healthcare (ACSQHC) to raise awareness and improve quality and safety related to these indicators. Over these years, the Australian healthcare system has reported a downward trend in these indicators. Therefore, the gains made by the introduction of these frameworks need to be seen and interpreted in this context.

Tangible benefits of the revenue cycle management program are related to improvements in the average length of stay, revenue per bed days (through improved documentation and coding) and revenue optimisation. The individual and combined implementation of these frameworks has an impact on the financial performance of the organisation, which is reflected in the measure of profitability as earnings before interest, tax, depreciation, amortisation and rent.

The ensuing analysis is first undertaken with regard to the individual impact of each of the frameworks examined, and is then followed by the findings from the aggregated impact of the three frameworks combined.

Hospital-acquired pressure ulcers [HAPU] are lesions caused by unrelieved pressure resulting in damage to the underlying tissue. Pressure ulcers are an internationally recognised patient safety problem (Berquist-Beringer et al., 2009) and are largely preventable.

Pressure ulcer rate is calculated as follows:

$$\textbf{HAPU} = \frac{\text{(Number of pressure ulcers in accounting period)}}{\text{(Total number of patient days in accounting period)}} \times 100$$

Figure 13 provides details of the incidence of hospital-acquired pressure ulcers at the Hospital over the past 11 years, highlighting the impact that the Balanced Scorecard (BSC) and Magnet Recognition Program® (MRP) may have had on the overall performance of the Hospital in this important quality and safety indicator. The Australian Council on Healthcare Standards' (ACHS) benchmark (0.08%), shown in red, is available for hospital-acquired pressure ulcers and indicates that the Hospital has been well below it for those 11 years.

To facilitate the interpretation of the trend lines, the relevant studied years are highlighted, with a red square denoting the potential impact of the Balanced Scorecard; a blue one for the Magnet Recognition Program®; and a green one for the revenue cycle management program (when relevant). All calculations are indicated in detail in tables 32 and 33 (p. 137-138).

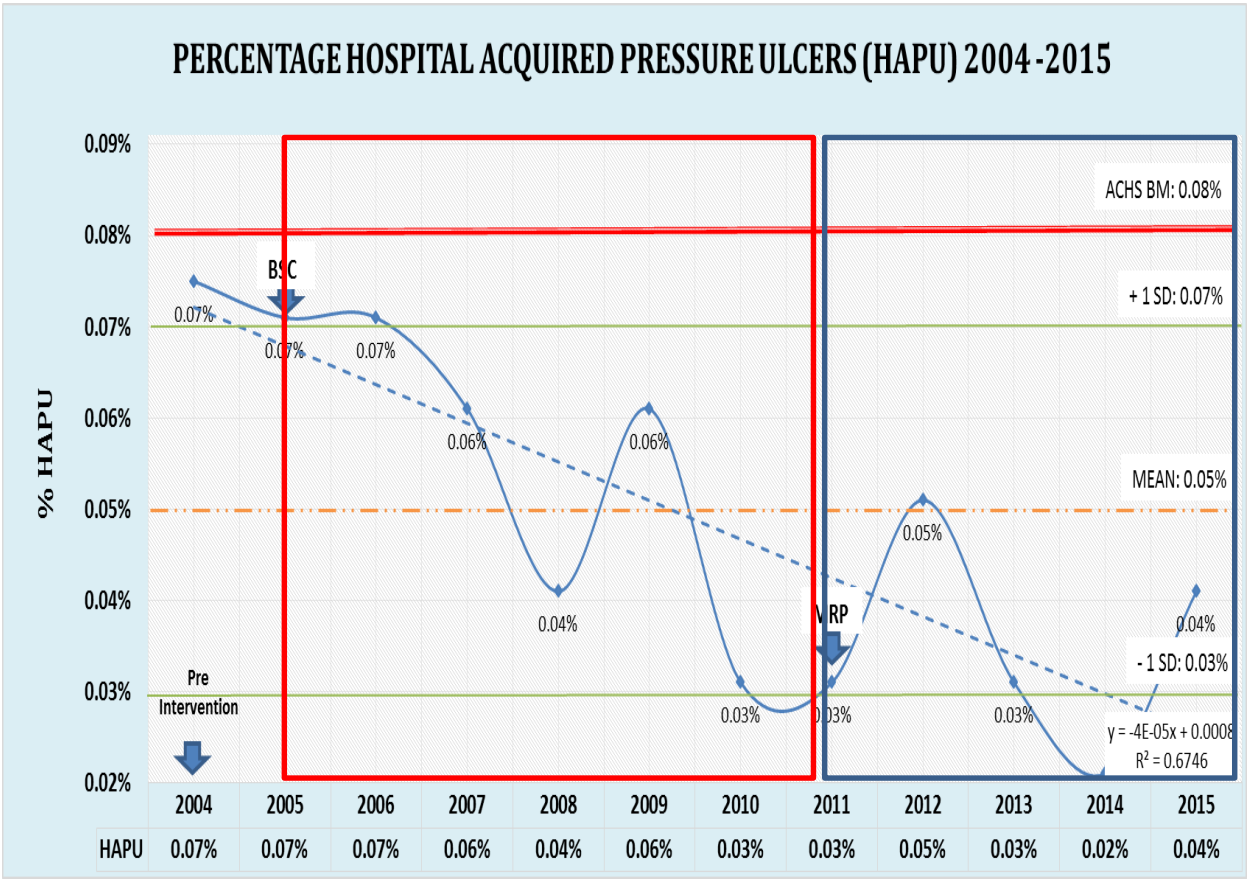

Figure 13. Percentage of SVPHS's inpatients with HAPU: 2004–15.

The incidence of hospital-acquired pressure ulcers was reduced by 26.39% from a baseline average of 0.074% in 2004 to an average of 0.055% in the years 2005 to 2010 (adjusted for inpatient growth) following the introduction of the Balanced Scorecard. It is important to note that the Hospital had already achieved below national average scores prior to 2005. This equated to a reduction of 19 pressure ulcers from 72 to 53 (Table 17 – Item 1.1 minus Item 1.3), with an average value of $9,855 each, which amounted to a total savings of $187,245 (1.3 x 1.4) for the period examined as indicated in Table 17.

Table 17

Hospital-Acquired Pressure Ulcers – Balanced Scorecard (BSC): 2005–10

SVPHS	Hospital-acquired pressure ulcers – BSC	Amount
1.1	Annual number of HAPU at SVPHS in 2004	72
1.2	Percentage improvement since the introduction of the BSC	26.39%
1.3	Reduction in pressure ulcers	19
1.4	Average cost of pressure ulcers	$9,855
Annual savings related to fewer pressure ulcers – BSC		$187,245

During the period following the introduction of the Magnet Recognition Program®, the incidence of hospital-acquired pressure ulcers showed a reduction of 37.74% from a baseline average measure of 0.055% for the 2005–10 period to an average of 0.034% for the 2011 to 2015 period. This equated to a further reduction of 20 pressure ulcers, from 53 to 33 (1.1 minus 1.3), with an average value of $9,855 each, which amounted to a total savings of $197,100 (1.3 x 1.4) for the period examined as indicated in Table 18.

Table 18

Hospital-Acquired Pressure Ulcers – Magnet Recognition Program®: 2011–15

SVPHS	Hospital-acquired pressure ulcers – MRP	Amount
1.1	Annual number of HAPU at SVPHS in 2011	53
1.2	Percentage improvement since the introduction of the BSC	37.74%
1.3	Reduction in pressure ulcers	20
1.4	Average cost of pressure ulcers	$9,855
Annual savings related to fewer pressure ulcers - MRP		$197,100

During the period combining the introduction of the Balanced Scorecard and the Magnet Recognition Program®, the incidence of hospital-acquired pressure ulcers was reduced by a total of 38.57%, from a baseline average of 0.074% in 2004 to an average of 0.045% in the years 2005 to 2015. This improvement resulted in a reduction of 39 pressure ulcers, from 72 to 33 (1.1 minus 1.3), with an average value of $9,855 each, which amounted to a total savings of $384,345 (1.3 x 1.4) for the 2005–15 period as indicated in Table 19.

Hospital savings are derived from a combination of factors, which include increased costs of treatment for pressure ulcers (medical and surgical supplies, but mainly labour costs) and additional bed days required to treat pressure ulcers and the opportunity cost of being able to backfill those beds lost. More recently, hospitals have been penalised and not paid for what is called "highly preventable hospital acquired adverse events", including pressure ulcers, patient falls, infections and many others (Medibank, 2017; Whyte, 2015).

Table 19

Hospital-Acquired Pressure Ulcers (HAPU) – Balanced Scorecard and Magnet Recognition Program®: 2005–15

SVPHS	Hospital-acquired pressure ulcers – BSC+MRP	Amount
1.1	Annual number of HAPU at SVPHS in 2004	72
1.2	Percentage improvement since the introduction of the Balanced Scorecard and Magnet Recognition Program®	38.57%
1.3	Reduction in pressure ulcers	39
1.4	Average cost of pressure ulcers	$9,855
Annual savings related to fewer pressure ulcers		$384,345

Patient falls in hospitals are common, and generally range from 2.3 to 7 falls per 1,000 patient days (Hitcho et al., 2004) and approximately 30% of those falls result in injury, with 4% to 6% resulting in serious injury (Watson, Clapperton, & Mitchell, 2010).

The patient falls rate is calculated as follows:

Patient Falls rate = (Number of patient falls in accounting period) x 100
(Total number of patient days in accounting period)

Figure 14 provides details of the incidence of patient falls at the Hospital over the past 11 years, highlighting the impact that the Balanced Scorecard and the Magnet Recognition Program® may have had on the overall performance of this important quality and safety indicator. The Australian Council on Healthcare Standards benchmark shown in red indicates that the Hospital had been performing below it prior to the introduction of these quality improvement frameworks.

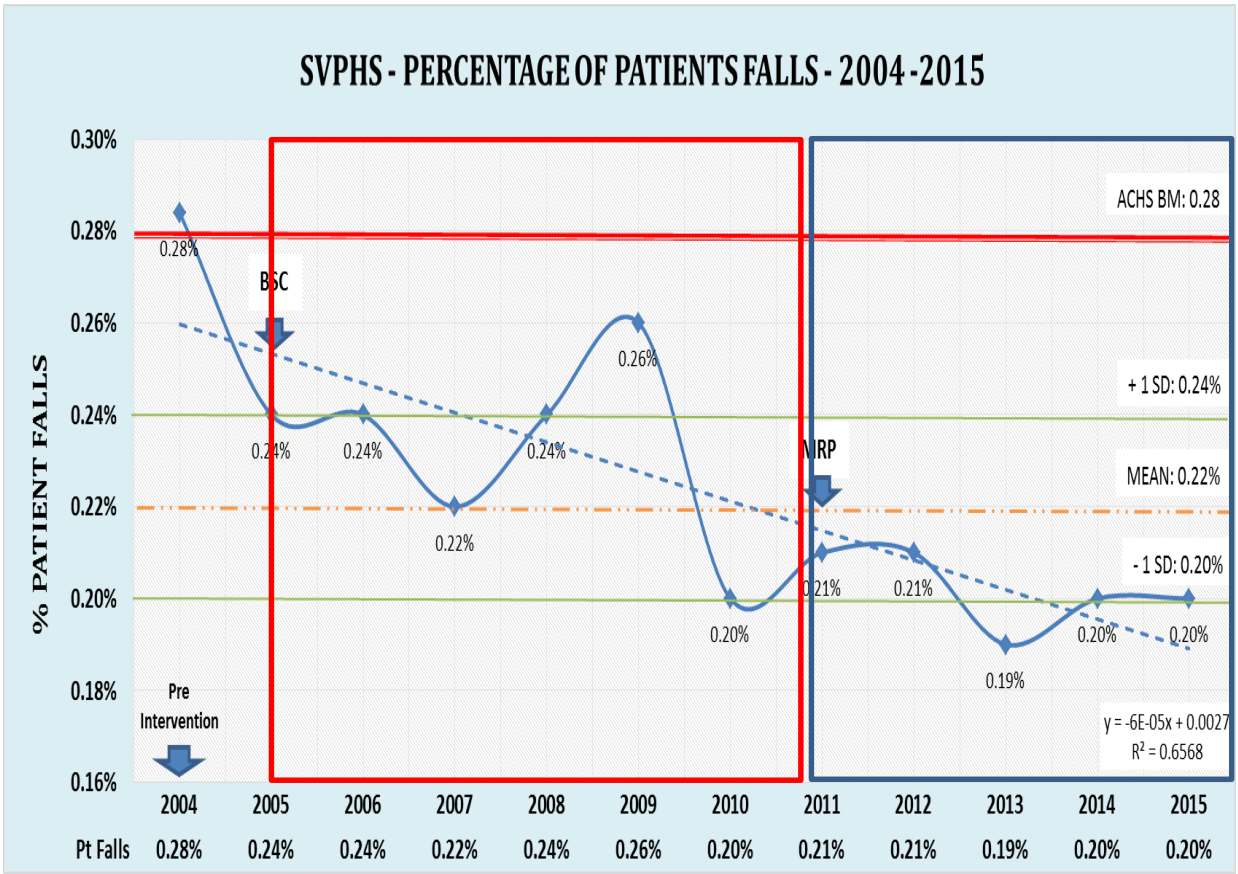

Figure 14. Percentage of patient falls: 2004–15.

The incidence of patient falls was reduced by 18.18%, from an average baseline measure of 0.28% in 2004 to an average of 0.23% following the introduction of the Balanced Scorecard in the years 2005 to 2010. This equated to a reduction of 4 patient falls, from 22 to 18 (1.1 minus 1.3), with an average value of $6,669 each, which amounted to a total savings of $26,676 (1.3 x 1.4) for the period examined as indicated in Table 20.

Table 20

Patient Falls – Balanced Scorecard: 2005–10

SVPHS	Patient Falls – Balanced Scorecard	Amount
1.1	Annual number of patient falls at SVPHS in 2004	22
1.2	Percentage improvement since the introduction of the BSC	18.18%
1.3	Reduction in patient falls	4
1.4	Average cost of a patient fall	$6,669
Annual savings related to fewer patient falls – BSC		$26,676

During the period following the introduction of the Magnet Recognition Program®, the incidence of patient falls showed a further reduction of 11.11%, from a baseline average measure of 0.23% for the 2005–10 period to an average of 0.20% for the 2011–15 period. This equated to a further reduction of 2 patient falls, from 18 to 16 (1.1 minus 1.3), with an average value of $6,669 each, which amounted to a total savings of $13,338 (1.3 x 1.4) for the period examined as indicated in Table 21.

Table 21

Patient Falls – Magnet Recognition Program®: 2005–15

SVPHS	Patient Falls – Magnet Recognition Program®	Amount
1.1	Annual number of patient falls at SVPHS in 2011	18
1.2	Percentage improvement since the introduction of the Magnet Recognition Program®	11.11%
1.3	Reduction in patient falls	2
1.4	Average cost of a patient fall	$6,669
Annual savings related to fewer patient falls – MRP		$13,338

During the period combining the introduction of the Balanced Scorecard and the Magnet Recognition Program®, the incidence of patient falls showed a reduction of 22.86%, from a baseline average measure of 0.28% in 2004 to an average of 0.22% for the period 2005 to 2015. This improvement resulted in a reduction of 6 patient falls, from 22 to 16 (1.1 minus 1.3), with an average value of $6,669 each, which amounted to a total savings of $40,014 (1.3 x 1.4) for the 2005–15 period as indicated in Table 22.

Table 22

Patient Falls – Balanced Scorecard and Magnet Recognition Program®: 2005–15

SVPHS	Patient Falls – BSC+MRP	Amount
1.1	Annual number of patient falls at SVPHS in 2004	22
1.2	Percentage improvement since the introduction of the BSC+MRP	22.86%
1.3	Reduction in patient falls	6
1.4	Average cost of patient falls	$6,669
Annual savings related to fewer patient falls – BSC+MRP		$40,014

Needlestick injuries are major physical and psychological hazards for healthcare workers worldwide (Whitby & McLaws, 2002). During the period combining the introduction of the Balanced Scorecard and the Magnet Recognition Program®, the incidence of needlestick injury showed a reduction of 33.33%, from a baseline average measure of 54 needlestick injuries in 2004 to an average of 36 (1.1 minus 1.3) for the 2005 to 2015 period. This improvement resulted in a reduction of 18 needlestick injuries, with an average value of $943 each, which amounted to a total savings of $16,974 (1.3 x 1.4) for 2005–15 as indicated in Table 23.

Table 23

Needlestick Injuries – 2005–15

SVPHS	Needlestick injury	Amount
1.1	Annual number of needlestick injuries at SVPHS in 2004	54
1.2	Percentage improvement as Magnet hospital	33.33%
1.3	Reduction in needlestick injuries	18
1.4	Average cost of needlestick injuries	$943
Annual savings related to fewer needlestick injuries		$16,974

Lost-time injury frequency rate (LTIFR)

Manual handling activities amongst healthcare workers are a significant concern, resulting in physical, pathological and psychological injuries (Retsas & Pinikahana, 2000). Lost-time injuries were those that resulted in nursing time lost from work of one day/shift or more. The lost-time injury frequency rate is calculated as follows:

$$\textbf{LTIFR} = \frac{\text{(Number of lost-time injuries in accounting period)}}{\text{(Total hours worked in accounting period)}} \times 1{,}000{,}000$$

Figure 15 provides details of the incidence of the lost-time injury frequency rate over the past 11 years at the Hospital, highlighting the impact that the Balanced Scorecard and Magnet Recognition Program® may have had on the Hospital's performance in this staff safety indicator.

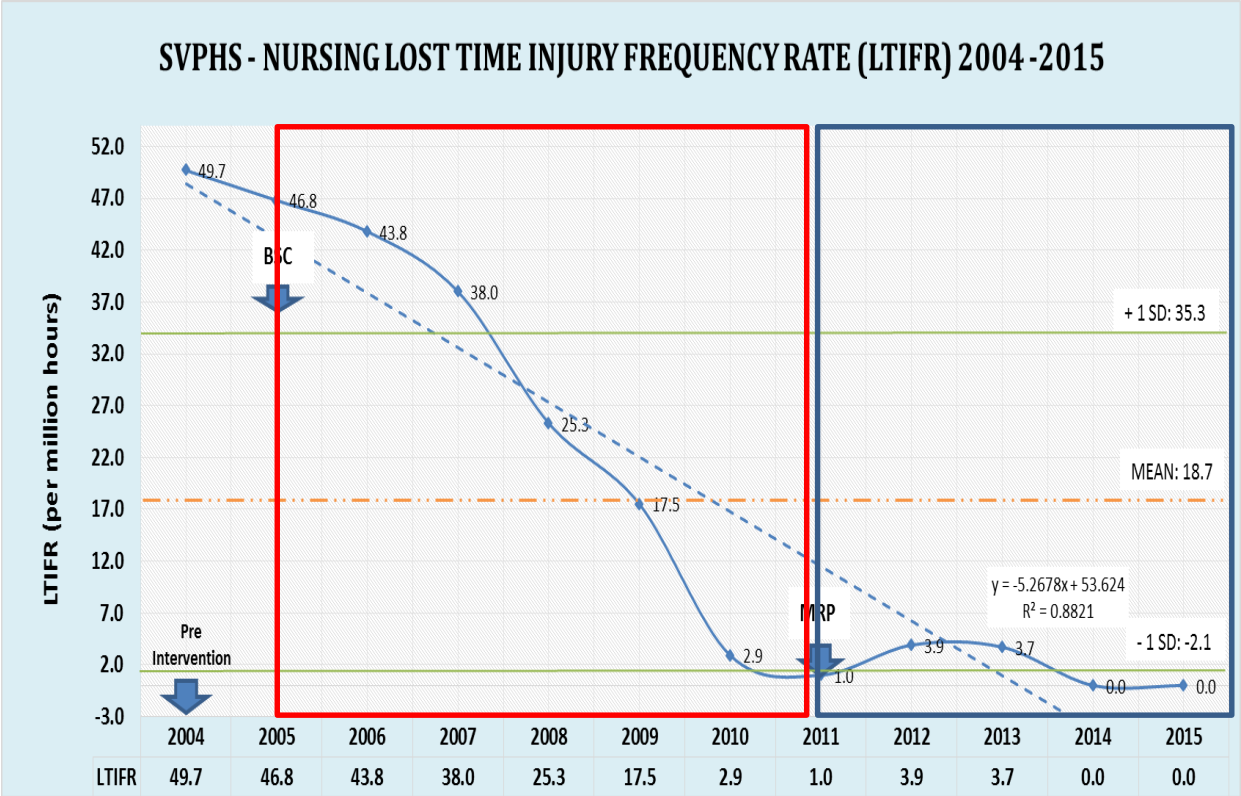

Figure 15. Nursing lost-time injuries frequency rate (LTIFR): 2004–15.

The incidence of lost-time injuries was reduced by 41.5%, from a baseline average measure of 49.7 (51 lost-time injuries) in 2004 to an average of 29.1 (30 lost-time injuries) following the introduction of the Balanced Scorecard for the 2005 to 2010 period. This equated to a reduction of 21 lost-time injuries, from 51 to 30, with an average value of $1,000 each, which amounted to a savings of $21,000 (1.3 x 1.4) for the period examined as indicated in Table 24.

Table 24

Nursing Lost-Time Injury Frequency Rate (LTIFR) – Balanced Scorecard: 2005-10

SVPHS	Lost-time injury frequency rate (LTIFR) – BSC	Amount
1.1	Annual LTIFR at SVPHS in 2004	49.7
1.2	Percentage improvement since the introduction of the BSC	41.5%
1.3	Reduction in lost-time injuries (LTIs)	21
1.4	Average cost of a LTI	$1000
Annual savings related to a decrease in LTIFR – BSC		$21,000

During the period following the introduction of the Magnet Recognition Program®, the incidence of lost-time injury showed a further reduction from a baseline average measure of 29.1 (30 lost-time injuries) in 2005–10 to an average of 3 for the 2011–15 period. This equated to a further reduction of 27 lost-time injuries, with an average value of $1,000 each, which amounted to a total of $27,000 (1.2 x 1.3) savings for the period examined as indicated in Table 25. When examining Figure 15 above, one could argue that the Magnet Recognition Program® had no impact on the reduction of LTIRF, as the trend had reached a low point and the method used (period averages) accentuated its actual impact on the reduction reported.

Table 25

Nursing Lost-Time Injury Frequency Rate (LTIFR) – Magnet Recognition Program®:2011–15

SVPHS	Decrease in lost-time injury (LTI) – MRP	Amount
1.1	Annual LTIFR at SVPHS in 2011	29.1
1.2	Reduction in LTIs	27
1.3	Average cost of a LTI	$1000
Annual savings related to a decrease in LTIFR – MRP		$27,000

During the period combining the introduction of the Balanced Scorecard and the Magnet Recognition Program®, the incidence of lost-time injuries showed a reduction of 66.5%, from a baseline average measure of 49.7 in 2004 to an average of 16.6 in the years 2005 to 2015. This improvement resulted in a reduction in the lost-time injury frequency rate, which amounted to a total savings of $48,000 (1.3 x 1.4) for the 2005–15 period as indicated in Table 26.

Table 26

Nursing Lost-Time Injury Frequency Rate (LTIFR) – BSC+MRP: 2005–15

SVPHS	Decrease in lost-time injury (LTI) – BSC+MRP	Amount
1.1	Annual LTIFR at SVPHS in 2004	49.7
1.2	Percentage improvement since the introduction of the BSC+MRP	66.5%
1.3	Reduction in LTIs	48
1.4	Average cost of a LTI	$1000
Total savings related to a decrease in LTIFR		$48,000

Registered nurses' vacancy rates, turnover rates, overtime and agency utilisation

Analysis of the potential impact of the Balanced Scorecard in the years 2005 to 2010

In 2004, the Hospital's Nursing Directorate consisted of 420 full-time equivalents (FTEs) of registered nurses (RNs) with an average vacancy rate of 7.5% or 31.5 FTEs. The vacancy rate dropped to 3.2%, a 68.3% reduction following the introduction of the Balanced Scorecard in the years 2005 to 2010. This reduction translated to 35,687 (1.5 x 1.6) hours or 18.06 FTEs. The premium or hourly rate differential between the average RN's actual hourly rate and the overtime and agency hourly rate substitution was $28.5 per hour, which amounted to $1,017,079 (1.7 x 1.8) savings per year as indicated in Table 27 and represented in Figure 16.

During that time, the turnover rate in the Nursing Directorate reduced by 20.7%, from an average of 17.4% in 2004 to an average of 13.8% for the 2005–10 period as indicated in Figure

17. The agency utilisation dropped by 31.7%, from an average of 18% in 2004 to an average of 12.3% for the 2005–10 period as indicated in Figure 18. The work hours per patient day (WHPPD), a measure of efficiency shown in Figure 19, was reduced by 2.4% from an average of 12.3 work hours per patient day in 2004 to an average of 12 work hours per patient day for the 2005–10 period (included in Table 34). These improvements resulted in a total savings of $1,017,079 per year. The source of savings from vacancy rates result from reductions in hourly labour costs associated with a decrease in agency, overtime utilisation and turnover rate.

Table 27

RN Vacancy, Overtime, Agency and Turnover Rates – Balanced Scorecard: 2005–10

SVPHS	RN vacancy, overtime, agency and turnover savings – Balanced Scorecard	Amount
1.1	RN vacancy rate at SVPHS in 2004	7.5%
1.2	RN vacancy rate at SVPHS in 2010	3.2%
1.3	Potential reduction in RN vacancy rate	4.3%
1.4	Number of direct-care RN FTEs at SVPHS	420
1.5	FTE reduction in vacant RN positions	18.06
1.6	Number of hours per FTE	1,976
1.7	Reduction to premium pay hours related to RN vacancy	35,687
1.8	Premium pay/hour (avg. of agency and OT)	$28.50
Annual savings related to RN vacancy – Balanced Scorecard		$1,017,079

Analysis of the potential impact of the Magnet Recognition Program® in the years 2011 to 2015

Between 2011 and 2015, the Nursing Directorate at the Hospital had an average of 440 FTE registered nurses and the vacancy rate in the Nursing Directorate had been reduced from 3.2% in the 2005–10 period to 0% for the 2011–15 period. The vacancy rate was reduced to zero in 2011 and remained at zero to 2015. These reductions yielded the Hospital 14.08 FTEs or 27,822

(1.5 x 1.6) hours. The estimated premium or hourly rate differential between the average RN's actual hourly rate and the overtime and agency hourly rate substitution was $28.5 per hour, which translated to a savings of $792,927 (1.7 x 1.8) per year between the years 2011 and 2015 as indicated in Table 28 and represented in Figure 16.

During that period, the turnover rate in the Nursing Directorate reduced by 58.5% from an average of 13.8% for the 2005–10 period to an average of 5.73% for the 2011–15 period as shown in Figure 17. The agency utilisation dropped by 50.4% from an average of 12.3% in for 2005–10 to an average of 6.1% for 2011–15 as indicated in Figure 18. The work hours per patient day (WHPPD) were reduced by 1.7% from an average of 12 work hours per patient day for 2005–10 to an average of 11.8 work hours per patient day for 2011–15 (included in Table 35). These improvements resulted in a total savings of $792,927 per year.

Table 28

RN Vacancy, Overtime, Agency and Turnover Rates – Magnet Recognition Program®: 2011–15

SVPHS	RN vacancy, overtime, agency and turnover savings – MRP	Amount
1.1	RN vacancy rate at SVPHS in 2010	3.2%
1.2	RN vacancy rate at SVPHS in 2011	0%
1.3	Potential reduction in RN vacancy rate	3.2%
1.4	Number of direct-care RN FTEs at SVPHS	440
1.5	FTE reduction in vacant RN positions	14.08
1.6	Number of hours per FTE	1,976
1.7	Reduction to premium pay hours related to RN vacancy	27,822
1.8	Premium pay/hour (avg. of agency and OT)	$28.50
Annual savings related to RN vacancy - MRP		$792,927

Analysis of the combined impact of the Balanced Scorecard and Magnet Recognition Program® in the years 2005-2015

Between 2005 and 2015, the Nursing Directorate at the Hospital had an average of 428 FTE registered nurses and the vacancy rate was reduced by 82.8%, from an average of 7.5% in 2004 to an average of 1.3% for the 2005–15 period. The vacancy rate was reduced to zero in 2011 and remained at zero to 2015. These reductions yielded the hospital 32.1 FTEs, 63,430 (1.5 x 1.6) hours and a savings of $1,807,755 (1.7 x 1.8) per year between 2011 and 2015 as indicated in Table 29 and represented in Figure 16.

During that time, the turnover rate in the Nursing Directorate reduced by 41.7%, from an average of 17.4% in 2004 to an average of 10.1% for the 2005–15 period as shown in Figure 17. The turnover rate in 2015 was 3.9%. The agency utilisation dropped by 47.5%, from an average of 18% in 2004 to an average of 9.4% for the 2005–15 period as indicated in Figure 18. The agency utilisation in 2015 was 6.1%. The work hours per patient day shown in figure 19 were reduced by 2.9%, from an average of 12.3 in 2004 to an average of 11.9 for the 2005–15 period. The work hours per patient day in 2015 were 11.6 (included in Table 37). During the period combining the introduction of the Balanced Scorecard and the Magnet Recognition Program®, the vacancy and turnover rates, as well as agency utilisation and work hours per patient day, improved, which delivered a yearly total savings of $1,807,755 between 2005 and 2015.

Table 29

RN Vacancy, Overtime, Agency and Turnover Rates – BSC+MRP: 2005–15

SVPHS	RN vacancy, overtime, agency & turnover savings – BSC+MRP	Amount
1.1	RN vacancy rate at SVPHS in 2004	7.5%
1.2	RN vacancy rate at SVPHS in 2011–15	0%
1.3	Potential reduction in RN vacancy rate	7.5%
1.4	Number of direct-care RN FTEs at SVPHS	428
1.5	FTE reduction in vacant RN positions	32.10
1.6	Number of hours per FTE	1,976
1.7	Reduction to premium pay hours related to RN vacancy	63,430
1.8	Premium pay/hour (avg. of agency and OT)	$28.50
Annual savings related to RN vacancy – BSC+MRP		$1,807,755

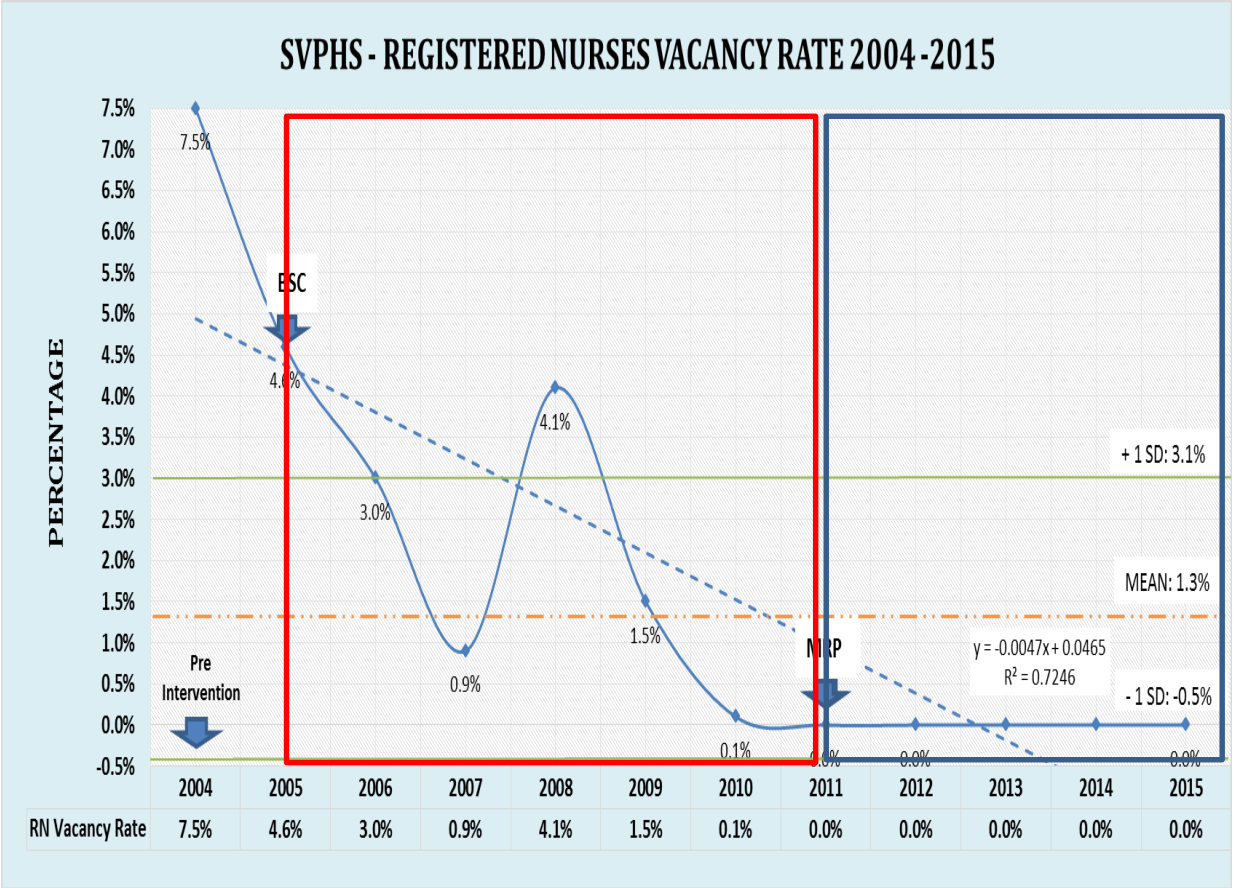

Figure 16. Registered nurses' vacancy rate: 2004–15.

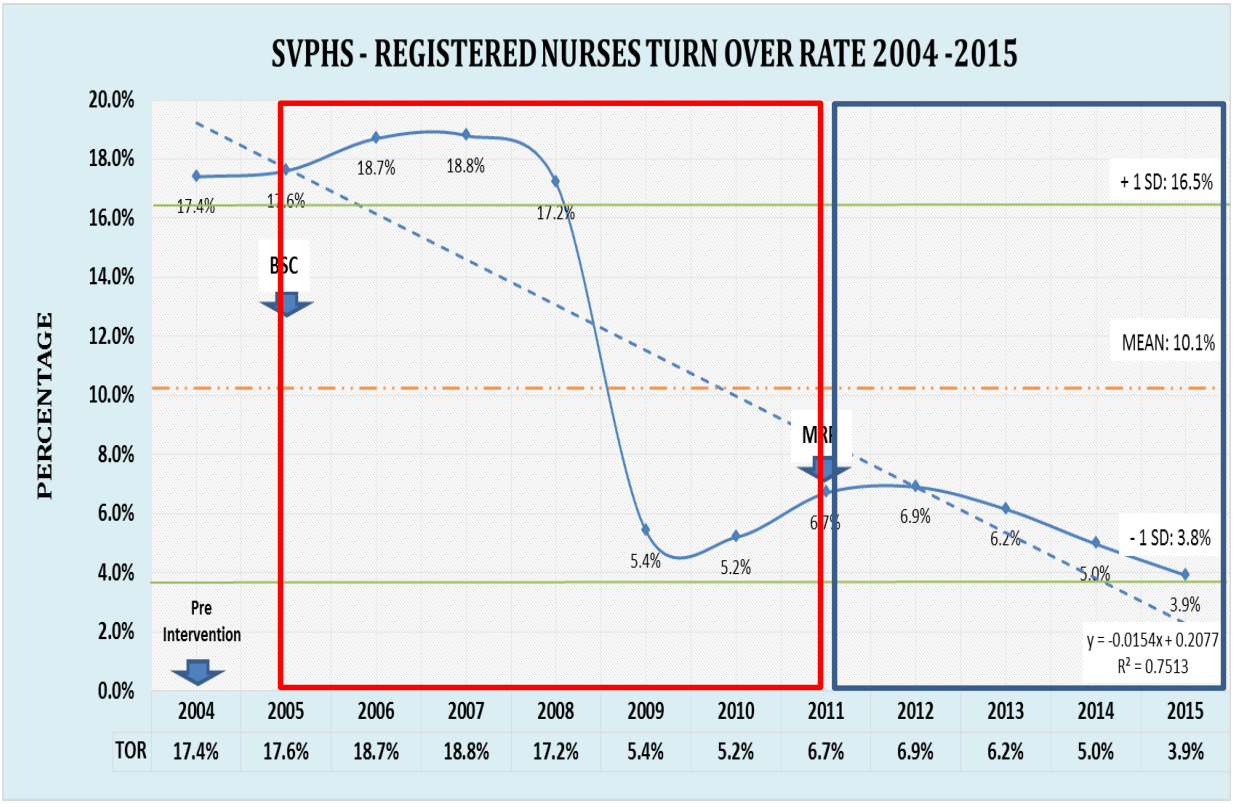

Figure 17. Registered nurses' turnover rate: 2004–15.

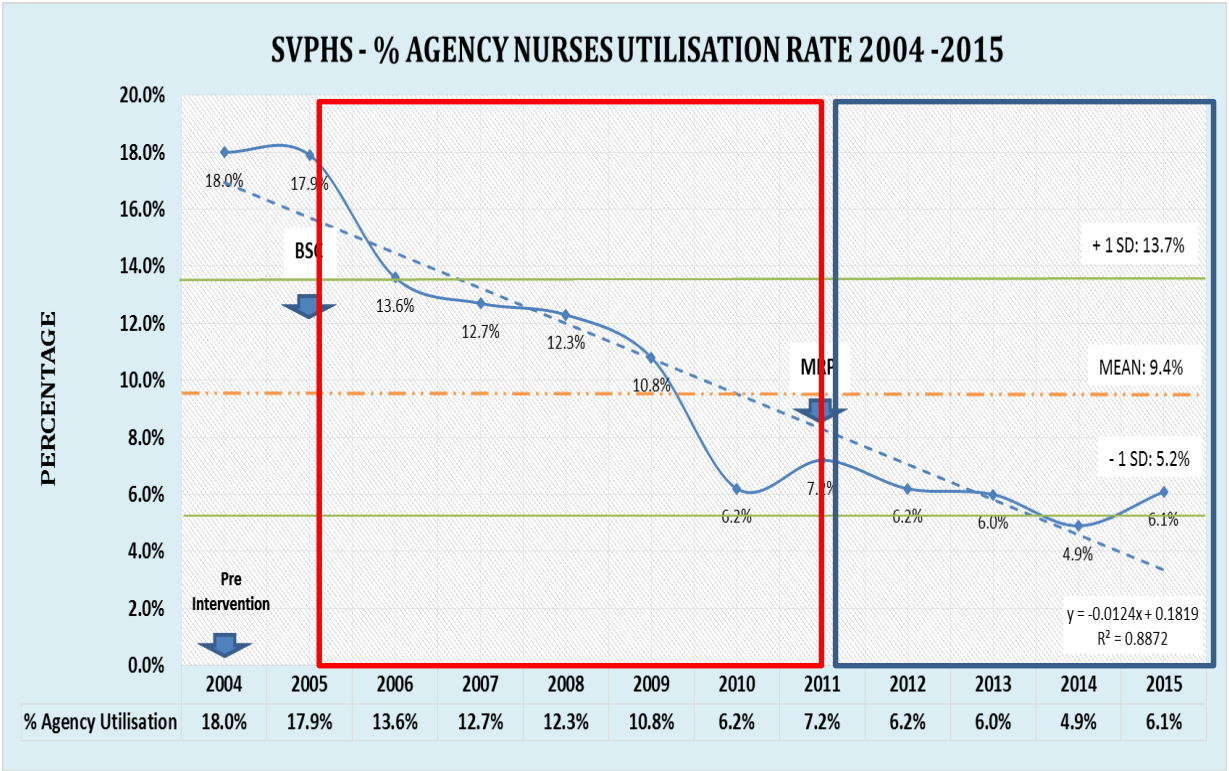

Figure 18. Percentage agency utilisation 2004–15.

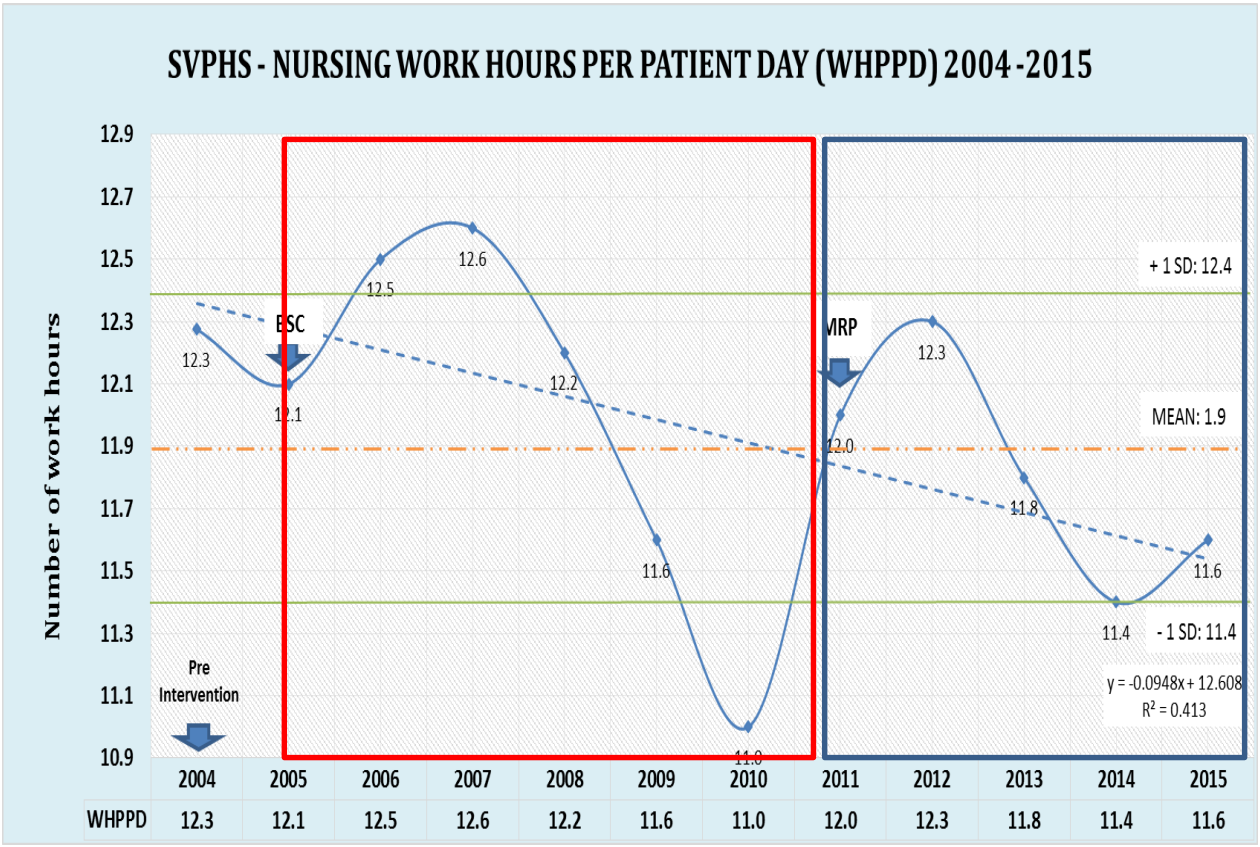

Figure 19. Nursing work hours per patient day: 2004–15.

Overnight average length of stay, revenue per bed day and earnings before interest, tax, depreciation, amortisation and rent

The average length of stay, revenue per bed day and earnings before interest, tax, depreciation, amortisation and rent, are key efficiency and financial indicators within a healthcare facility. Achieving an appropriate average length of stay, reflective of the casemix complexity is essential to minimise potential adverse events, such as readmissions to hospital, if discharges are premature. Financial penalties can be incurred if the negotiated average length of stay with private health insurance contracts is exceeded.

The revenue per bed day is a reflection of the casemix complexity and the result of negotiations with private health insurance providers. This indicator is also a key determinant of the healthcare facility's financial performance and viability.

Earnings before interest, tax, depreciation, amortisation and rent is a profitability measure that captures the overall financial performance of the organisation.

Analysis of the impact of the Balanced Scorecard in the years 2005 to 2010

In 2004 the Hospital's average length of stay was 5.4 days and in 2010 it was 5.1 days. The average length of stay during the 2005–10 period reduced to 5.2 days, which was a 4.3% reduction, as indicated in Figure 20.

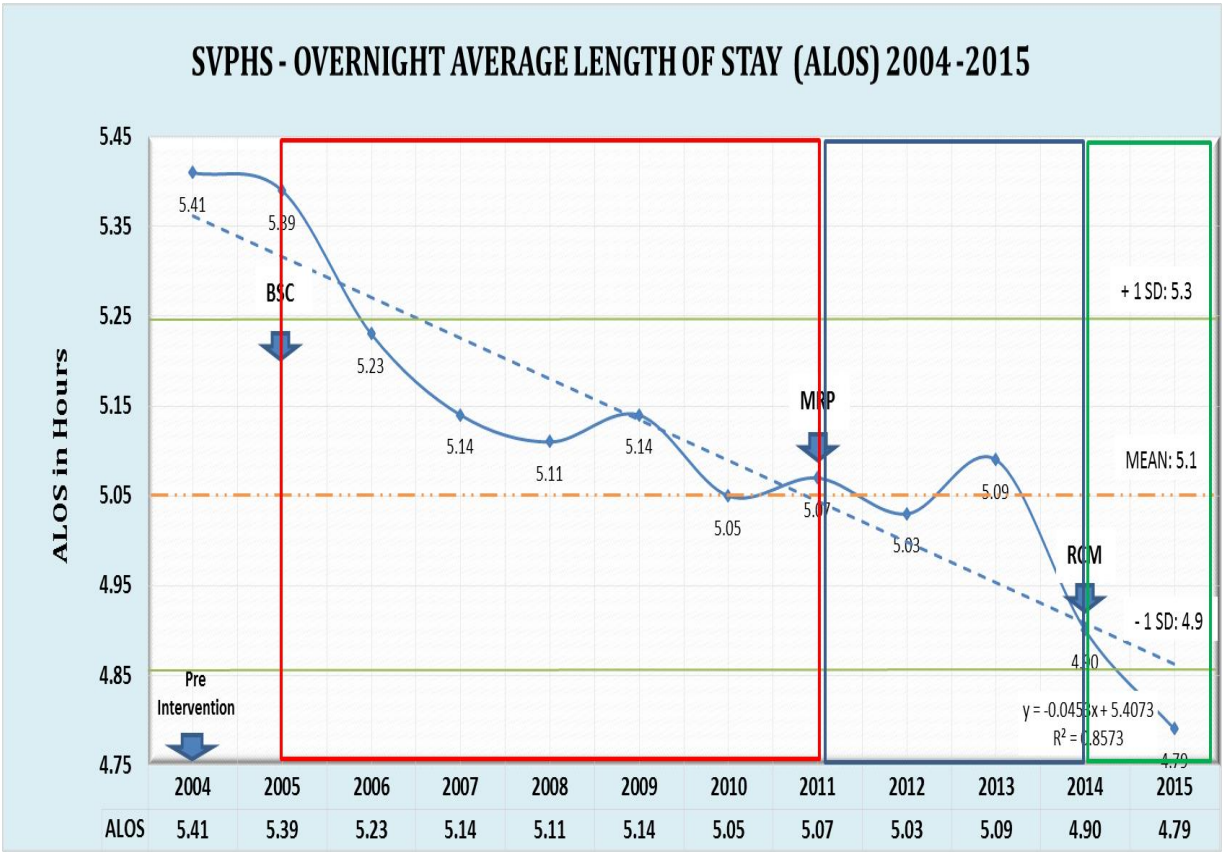

Figure 20. Overnight average length of stay: 2004–15.

The revenue per bed day in 2004 was $1,047 and $1,497 in 2010, a 43% increase. The average revenue per bed day during these years was $1,263 or 20.6% increase as indicated in Figure 21.

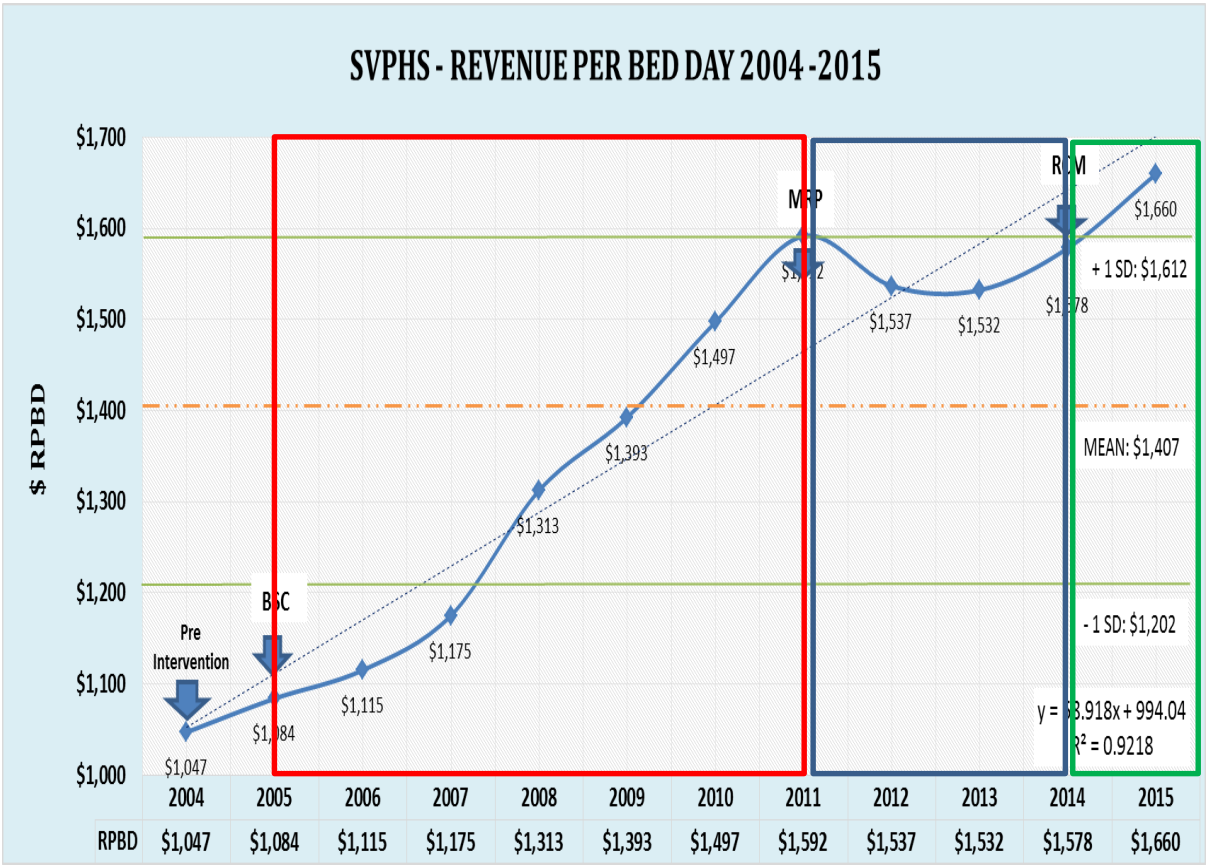

Figure 21. Revenue per bed day: 2004–15.

The earnings before interest, tax, depreciation, amortisation and rent in 2004 were 10% and 12.5% in 2010, an 8.5% increase. The average earnings before interest, tax, depreciation, amortisation and rent during 2005-2010 were 10.9% are represented in Figure 22.

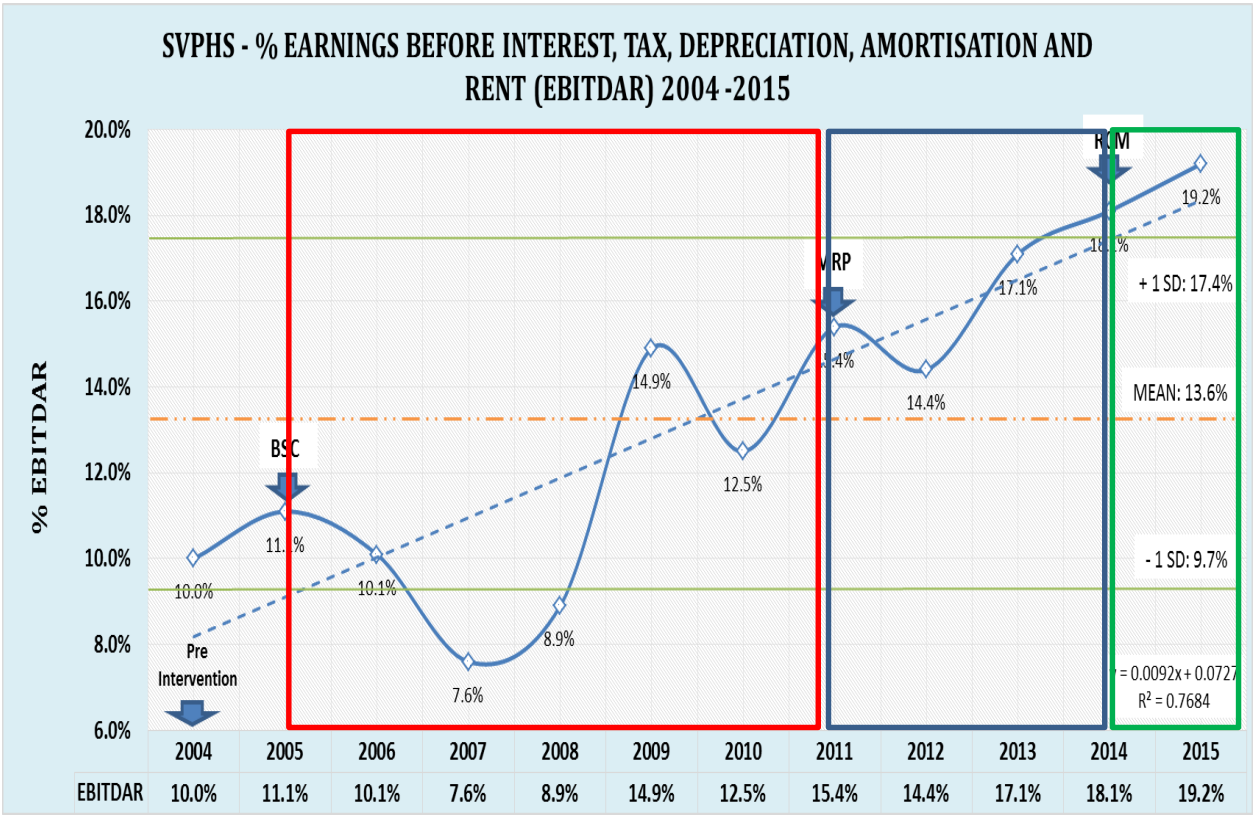

Figure 22. Percentage earnings before interest, tax, depreciation, amortisation and rent: 2004–15.

Analysis of the impact of the Magnet Recognition Program® in the years 2011 to 13

The Hospital's average length of stay for the 2005–10 period was 5.2 days and 5.1 days in 2013. The average length of stay remained at 5.1 days during the years 2011 to 2013, a 2.3% reduction as indicated in Figure 20.

The revenue per bed day for the 2011–13 period was an average of $1,554a 23% increase, compared to an average of $1,263 for the years 2005 to 2010, shown in Figure 21.

The earnings before interest, tax, depreciation, amortisation and rent for the 2011–13 period was 15.6% and 17.1% in 2013, a 44.1% increase, compared to the average of 10.9% in the 2005–10 period as represented in Figure 22.

Analysis of the impact of the revenue cycle management program in the years 2014 to 2015

The nursing-led revenue cycle management program was introduced at the Hospital in May 2014. It was aimed at further improving the efficiency and the sustainability of the Hospital by focusing on three main areas, namely, achieving an appropriate length of stay; a more comprehensive documentation of the inpatient episode of care and optimising the revenue that the hospital was entitled to receive; and reducing existing revenue leakages.

These tasks were executed by working closely with the health information services unit, nurse managers, clinical nurses, coders, allied health and medical staff to achieve a more appropriate length of stay; assisting and educating the nursing, allied health and medical staff to improve clinical documentation, which impacts on the Hospital's revenue and patient outcomes; and consulting with the executive of the Hospital to better understand and manage health fund contracts.

The Hospital's average length of stay for the years 2014 to2015 was 4.85 days, a reduction of 4.3% compared to 5.1 days for the 2011–13 period as indicated in Figure 20 and tables 30, 32 and 33. The potential impact of the revenue cycle management program in reducing the average length of stay was a savings of $448,956 in 2014-2015, calculated by multiplying the number of additional admissions with the EBITDAR dollar per admission (1.3 x 1.4).

Table 30

Average Length of Stay – Revenue Cycle Management: 2014–15

SVPHS	Average length of stay – Revenue Cycle Management	Amount
1.1	Average length of stay at SVPHS in 2014	5.1
1.2	Improvement since the introduction of the RCM	0.21
1.3	Number of admissions per year	493
1.4	Average EBITDAR margin per admission	$910.66
Annual savings related to a decrease in average length of stay		$448,956

The revenue per bed day for 2014–15 was an average of $1,619, a 4.2% (or $65.6) increase compared to the revenue per bed day average of $1,554 for 2011–13, shown in Figure 21 and tables 31, 32 & 33.

Table 31

Revenue per Bed Day (RPBD) – Revenue Cycle Management: 2014–15

SVPHS	Revenue per bed day – revenue cycle management program	Amount
1.1	RPBD at SVPHS in 2011-2013	$1,554
1.2	Improvement with the revenue cycle management program	4.2%
1.3	Improvement in RBPD	$65.6
1.4	Number of bed days per year	68,509
1.5	Average increase & EBITDAR per bed day	$10.22
Annual savings related to an increase in revenue per bed day		$700,728

The earnings before interest, tax, depreciation, amortisation and rent for 2014–15 was 18.7%, a 19.3% increase, compared to the average of 15.6% for 2011–13, represented in Figure 22 and tables 32 and 33. The potential impact of the revenue cycle management program in increasing

the revenue per bed day is a savings of $700,728 for 2014–15, calculated by multiplying the number of bed days with the $EBITDAR per bed day (1.4 x 1.5).

Analysis of the combined impact of the Balanced Scorecard, the Magnet Recognition Program® and the revenue cycle management program in the years 2005 to 2015

The Hospital's average length of stay for the years 2005 to 2015 was 5.1 days, a reduction of 6% compared to an average length of stay of 5.4 days in 2004, as represented in Figure 20 and tables 32 and 33. This reduction in overnight average length of stay freed up 5,100 bed days per year, with the opportunity to backfill them with additional admissions.

The revenue per bed day for 2004–15 was an average of $1,407, which was a 34.3% increase compared to the average revenue per bed day of $1,047 in 2004 and a 58.5% increase compared to the $1,660 in 2015 as indicated in Figure 21 and tables 32 and 33.

The earnings before interest, tax, depreciation, amortisation and rent for 2004–15 was an average of 13.6%, which was a 35.7% increase, compared to the average of 10% in 2004 and a 92% increase compared to 19.2% achieved in 2015. These results are detailed in Figure 22 and tables 32 and 33.

Tables 32 and 33 provide the data for the years 2004 to 2015 and the key performance indicators used in the cost-benefit analysis. They also detail the indicators' average and percentage variance for the potential impact of each of the three individual frameworks as well as the potential impact of the three combined.

Given the many factors influencing these indicators, such as variability in clinical practice, changes in casemix (complexity and private health insurance mix), it is challenging to

accurately quantify the impact of the Balanced Scorecard and Magnet Recognition Program® on the average length of stay, revenue per bed day and earnings before interest, tax, depreciation, amortisation and rent for the years 2005 to 2013. Clearly, the aforementioned changes in these indicators suggest improvements in all of these measures. However, since the introduction of the revenue cycle management program, a significant and noticeable change in revenue has occurred in the order of $1,110,202 and it is reflected in the percentage increase in earnings before interest, tax, depreciation, amortisation and rent.

Table 32

Performance Indicators: Average and Percentage Variance – Balanced Scorecard, Magnet Recognition Program® and Revenue Cycle Management Program: 2004–15.

	Pre-Intervention	Balanced Scorecard						Magnet Recognition Program®			Revenue Cycle Management					
Performance Indicators	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**AVE**	**SD**	**+1 SD**	**- 1 SD**
HAPU rate	0.074%	0.070%	0.070%	0.060%	0.040%	0.060%	0.030%	0.030%	0.050%	0.030%	0.020%	0.040%	0.045%	0.018%	0.063%	0.028%
HAPU Ave	0.074%					BSC	0.055%				MRP	0.034%			Combined	0.045%
HAPU % Var						BSC	26.39%				MRP	37.74%			Combined	38.57%
Patient Falls	0.28%	0.24%	0.24%	0.22%	0.24%	0.26%	0.20%	0.21%	0.21%	0.19%	0.20%	0.20%	0.22%	0.02%	0.24%	0.20%
Patient Falls Ave	0.28%					BSC	0.23%				MRP	0.20%			Combined	0.22%
Patient Falls % Var						BSC	18.18%				MRP	11.11%			Combined	22.86%
LTIFR	49.7	46.8	43.8	38.0	25.3	17.5	2.9	1.0	3.9	3.7	0.0	0.0	16.6	18.7	35.3	-2.1
LTIFR Ave	49.7					BSC	29.1				MRP	1.7			Combined	16.6
LTIFR % Var						BSC	41.5%				MRP	94.1%			Combined	66.5%
RN Vacancy Rate	7.5%	4.6%	3.0%	0.9%	4.1%	1.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	1.8%	3.1%	-0.5%
RN Vacancy Rate Ave	7.5%					BSC	3.2%				MRP	0.00%			Combined	1.3%
RN Vacancy Rate % Var						BSC	68.3%				MRP	100.0%			Combined	82.8%
Turnover rate	17.4%	17.6%	18.7%	18.8%	17.2%	5.4%	5.2%	6.7%	6.9%	6.2%	5.0%	3.9%	10.1%	6.4%	16.5%	3.8%
Turnover rate Ave	17.4%					BSC	13.8%				MRP	5.73%			Combined	10.1%
Turnover rate % Var						BSC	20.7%				MRP	58.5%			Combined	41.7%
% Agency Utilisation	18.0%	17.9%	13.6%	12.7%	12.3%	10.8%	6.2%	7.2%	6.2%	6.0%	4.9%	6.1%	9.4%	4.2%	13.7%	5.2%
% Agency Utilisation Ave	18.0%					BSC	12.3%				MRP	6.1%			Combined	9.4%
% Agency Utilisation % Var						BSC	31.7%				MRP	50.4%			Combined	47.5%
WHPPD	12.3	12.1	12.5	12.6	12.2	11.6	11.0	12.0	12.3	11.8	11.4	11.6	11.9	0.5	12.4	11.4
WHPPD Ave	12.3					BSC	12.0				MRP	11.8			Combined	11.9
WHPPD % Var						BSC	2.4%				MRP	1.7%			Combined	2.9%
ALOS (days)	5.4	5.4	5.2	5.1	5.1	5.1	5.1	5.1	5.0	5.1	4.9	4.8	5.1	0.2	5.2	4.9
ALOS Ave	5.4					BSC	5.2				MRP	5.06	RCM	4.8	Combined	5.1
ALOS % Var						BSC	4.3%				MRP	2.3%	RCM	4.3%	Combined	6.0%
Revenue/bed/day	$1,047	$1,084	$1,115	$1,175	$1,313	$1,393	$1,497	$1,592	$1,537	$1,532	$1,578	$1,660	$1,407	$205	$1,612	$1,202
Revenue/bed/day Ave	$1,047					BSC	$1,263				MRP	$1,554	RCM	$1,619	Combined	$1,407
Revenue/bed/day % Var						BSC	20.6%				MRP	23.0%	RCM	4.2%	Combined	34.3%
% EBITDAR	10.0%	11.1%	10.1%	7.6%	8.9%	14.9%	12.5%	15.4%	14.4%	17.1%	18.1%	19.2%	13.6%	3.8%	17.4%	9.7%
% EBITDAR Ave	10.0%					BSC	10.9%				MRP	15.6%	RCM	18.7%	Combined	13.6%
% EBITDAR % Var						BSC	8.5%				MRP	44.1%	RCM	19.3%	Combined	35.7%
Patient Satisf Nurs	87.0%	87.7%	88.5%	87.2%	88.0%	89.1%	89.0%	89.5%	89.2%	89.6%	90.8%	93.0%	89.2%	1.6%	90.8%	87.6%
Patient Satisf Nurs Ave	87.0%					BSC	88.3%				MRP	90.4%			Combined	89.2%
Patient Satisf Nurs						BSC	1.4%				MRP	2.5%			Combined	2.6%
Staff Engagement % var	45%	50%	50%	64%	64%	66%	66%	68%	68%	66%	66%	66%	63.1%	6.3%	69.4%	56.8%
Staff Engagement Ave	45%					BSC	60.0%				MRP	67.0%			Combined	62.8%
Staff Engagement % Var						BSC	33.3%				MRP	11.7%			Combined	39.6%

Table 33

Performance Indicators: Actuals and Percentage Variance – Balanced Scorecard, Magnet Recognition Program®, & Revenue Cycle Management Program: 2004–15

	Pre-Intervention	Balanced Scorecard			Magnet Recognition Program®			Revenue Cycle Managment			BSC+MRP+RCM
Indicators	**2004 Base Year**	**2010**	**Var**	**%Var**	**2013**	**Var**	**%Var**	**2015**	**Var**	**%Var**	**2004-2015 %Var**
HAPU	72	53	19	26.39%	33	20	37.74%	39	6	18.2%	38.57%
Patient Falls	22	18	4	18.18%	16	2	11.11%	6	10	62.5%	22.86%
Needle Stick Injuries	54	44	10	18.52%	36	8	18.18%	18	18	50.0%	33.33%
LTIFR	51	30	21	41.50%	3	27	94.1%	3	0	0.0%	66.50%
RN vacancy FTE	32	10	22	68.3%	0	0	100%	0	0	0.0%	82.8%
Agency FTE	76	52	24	31.7%	26	26	50.4%	23	3	9.8%	47.5%
Turnover FTE	73	58	15	20.7%	24	34	58.5%	19	5	22.5%	41.7%
WHPPD	12.3	12	0.3	2.4%	11.8	0.2	1.7%	11.5	0.3	2.5%	2.9%
Length of Stay	5.4	5.2	0.2334	4.3%	5.06	0.1166	2.3%	4.85	0.21	4.2%	6.0%
RPBD	$1,047	$1,263	-$216	20.6%	$1,554	$291	23.0%	$1,619	$65	4.2%	34.3%
%EBITDAR	10.0%	10.9%	0.8%	8.5%	15.6%	4.8%	44.1%	18.7%	3.0%	19.3%	35.7%
Patient Satisfaction	87.0%	88.3%	1.3%	1.4%	90.4%	2.2%	2.5%	90.4%	0.0%	0.0%	2.6%
Staff Engagement	45.0%	60.0%	15.0%	33.3%	67.0%	7.0%	11.7%	67.0%	0.0%	0.0%	39.6%

Intangible benefits

In addition to the research-based evidence stated in the methods section of this study, there are other qualitative and experiential gains that may provide additional benefits to the overall cost-benefit analysis and financial health of the organisation. These include but are not limited to reputation and good will; servant and transformational leadership; engaged culture; and high levels of patient satisfaction and staff experience, to mention a few. However, none of these is included as part of this cost-benefit analysis as monetisation of these phenomena is beyond the scope of this study. Therefore, the outcome of this cost-benefit analysis may have underestimated the total benefits of the qualitative and experiential results detailed in the next section; however, conversely, it may also have augmented the derived benefits of these indicators.

Patient satisfaction/experience

Patient satisfaction at the Hospital has been measured by Press Ganey and Associates for the past 15 years. As indicated in Figure 23, in 2004 the overall patient satisfaction with nursing mean score was 87%. Since the implementation of the Balanced Scorecard, for the period 2005 to 2010, the mean score increased to an average of 88.3%, and since receiving Magnet designation in 2011, the mean score increased to an average of 90.4% for the period 2011 to 2015. The Hospital has consistently scored within the 92–96 percentile rank for the peer group of private hospitals of 150–300 beds over the past 10 years.

Since 2014, the Hospital has also been measuring and benchmarking patient experience using the net promoter score through the Hospital Consumer Assessment of Healthcare Providers and Systems survey (HCAPS). The benchmarking partners include over 1,800 hospitals of which 1,450 are US hospitals and 224 are Magnet-designated hospitals. In 2014, the net promoter score at the Hospital increased from 74.5 to 84.5. The net promoter score is a metric that

organisations use to measure customer loyalty as it relates to an organisation's brand, product or service.

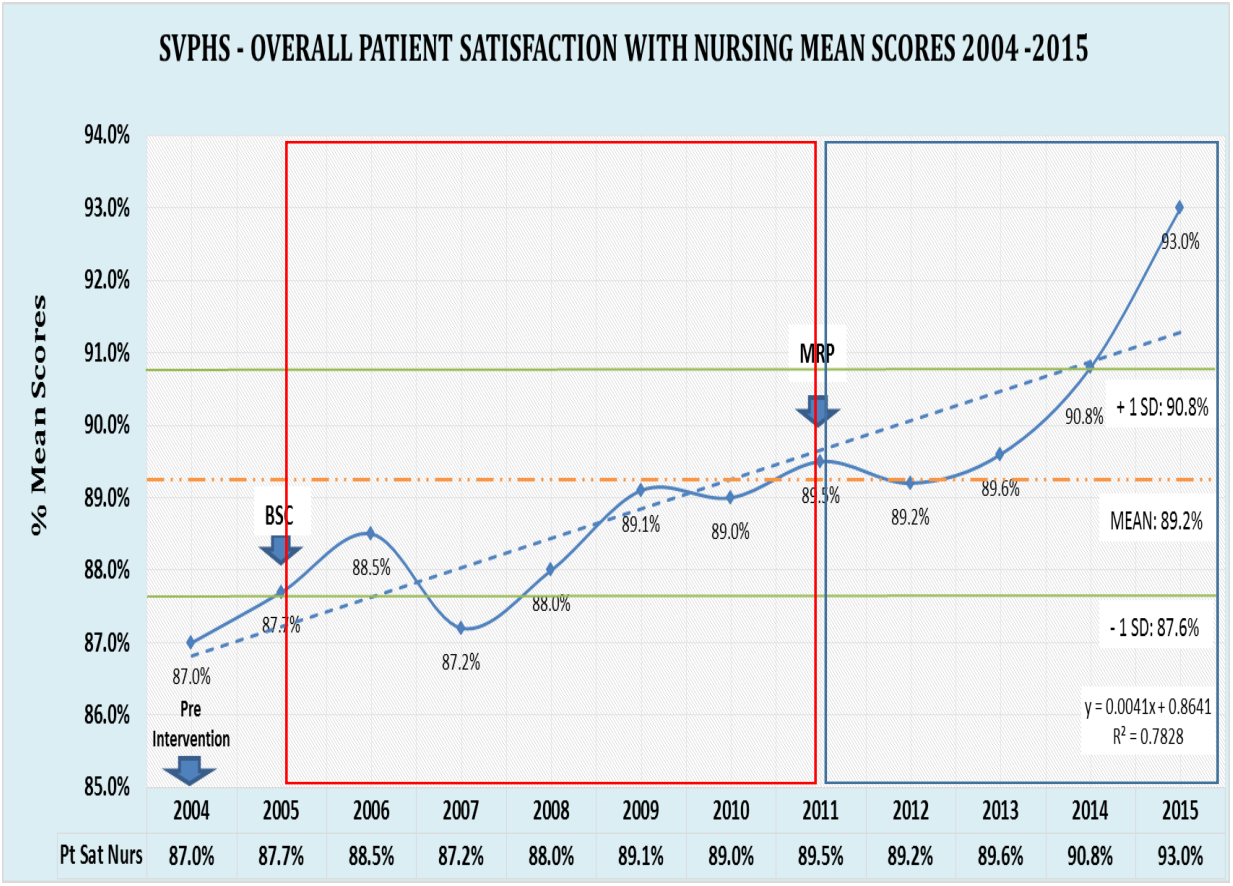

Figure 23. Overall patient satisfaction with nursing mean scores: 2004–15.

Staff satisfaction and engagement

Staff satisfaction and cultural engagement at the Hospital has been measured every two years through Best Practice Australia. As detailed in Figure 24, in 2004 the overall staff engagement score was 45%, which correlated to a culture of consolidation, borderline ambition. Since the implementation of the Balanced Scorecard, for the 2005 to 2010 period, the average staff engagement score increased to 60%, a 33% improvement. This led to the Hospital achieving a culture of success, which was maintained up to 2015. Since the Hospital also received Magnet

designation, the staff engagement mean score increased to 67%, a further 11.7% improvement as indicated in Figure 24.

The combined impact of the Balanced Scorecard and Magnet Recognition Program® on the Hospital culture yielded an average staff engagement score of 62.8% for the period 2005 to2013, which was a 39.6% improvement since 2004.

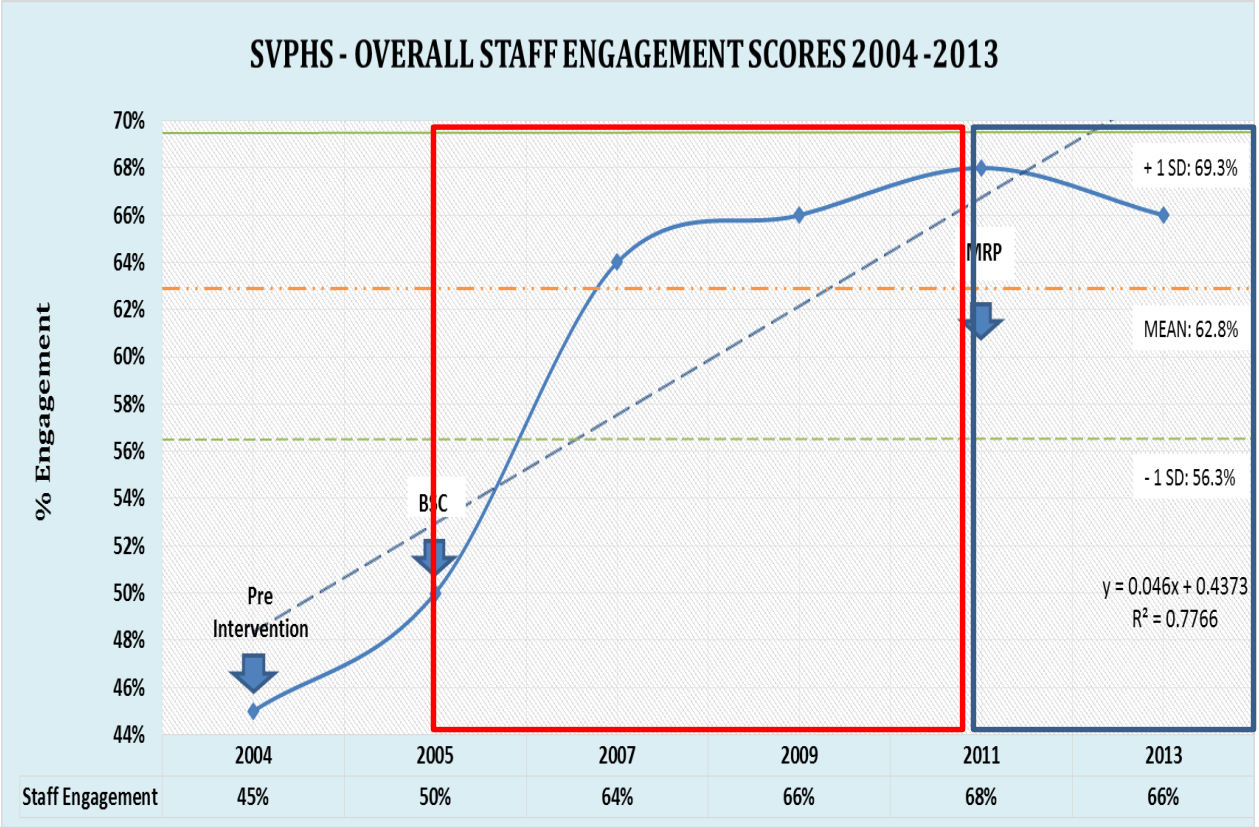

Figure 24. Overall staff engagement scores: 2004-2013.

Calculation of return on investment (ROI)

The cost-benefit analysis as it related to the introduction of the Balanced Scorecard demonstrated a net annual savings of $2,703,127 per year, with a return on investment of $41.10 for every dollar invested. The major savings were generated from improving accountability and performance in labour management, which was related to a reduction in vacancy rate, turnover

rate, overtime, agency utilisation and gains in efficiency through a reduction in the work hours per patient days (0.3) as detailed in Table 34.

Table 34

Annual Savings Associated with Implementing the Balanced Scorecard: 2005–10

SVPHS	Cost-benefit analysis summary – BSC	Amount
1.1	Reduction in number of pressure ulcers	$187,245
1.2	Reduction in number of patient falls	$26,676
1.3	Reduced RN vacancy, overtime, turnover, agency	$1,017,079
1.4	Reduction in work hours per patient day	$1,500,000
1.5	Reduction in number of needlestick injuries	$16,974
1.6	Reduction in number of lost-time injuries	$21,000
Annual savings of implementing the BSC		$2,768,975
Total cost of implementing the BSC		$65,848
Return on Investment (ROI) of BSC		41.1

The cost-benefit analysis in relation to the implementation of the Magnet Recognition Program® was associated with a net annual savings of $1,900,811 per year with a return on investment of $13.0 for every dollar invested as detailed in Table 35. Again, the major savings were derived from further improvements in accountability and performance in labour management, which was related to additional reductions in vacancies, overtime, agency utilisation, turnover rate and efficiency through a reduction in the work hours per patient days (0.2) as detailed in Table 35.

Table 35

Annual Savings Associated with Implementing the Magnet Recognition Program®: 2011–15

SVPHS	Cost-benefit analysis summary – MRP	Amount
1.1	Reduction in number of pressure ulcers	$197,100
1.2	Reduction in number of patient falls	$13,338
1.3	Reduced RN vacancy, overtime, turnover, agency	$792,929
1.4	Reduction in work hours per patient day	$1,000,000
1.5	Reduction in number of needlestick injuries	$16,974
1.6	Reduction in number of lost-time injuries	$27,000
Annual savings of implementing the MRP		$2,047,339
Total cost of implementing the MRP		$146,528
Return on Investment (ROI) of the MRP		13.0

The cost-benefit analysis related to the introduction of a revenue cycle management program was associated with a net annual savings of $1,044,934 per year with a return on investment of $10 for every dollar invested. The major savings were associated with improvement in average length of stay management and increases in revenue per bed day as detailed in Table 36.

Table 36

Annual Savings Associated with Implementing the Revenue Cycle Management Program: 2014–15

SVPHS	Cost-benefit analysis summary – RCM	Amount
1.1	Reduction in average length of stay	$448,956
1.2	Increase in revenue per bed day	$700,728
Savings of implement the RCM		$1,149,684
Total cost of implementing the RCM		$104,750
Return on Investment (ROI) of the RCM		10.0

Table 37 indicates that the combined cost-benefit analysis of the implementation of the three frameworks generated a benefit of $5,446,772 compared to the cost of $317,126. This realises a potential net annual savings of $5,129,646 or a 16.2-fold return on investment for the Hospital.

Table 37

Annual Savings Associated with Implementing the BSC+MRP+RCM: 2005–15

SVPHS	Cost-benefit analysis summary BSC+MRP+RCM	Amount
1.1	Reduction in number of pressure ulcers	$384,345
1.2	Reduction in number of patient falls	$40,014
1.3	Reduced RN vacancy, overtime, turnover, agency	$1,807,755
1.4	Reduction in work hours per patient day	$2,000,000
1.5	Reduction in number of needlestick injuries	$16,974
1.6	Reduction in number of lost-time injuries	$48,000
1.7	Reduction in average length of stay	$448,956
1.8	Increase in RPBD	$700,728
Annual savings of implementing the BSC+MRP+RCM		$5,446,772
Total cost of implementing the BSC+MRP+RCM		$317,126
Return on Investment (ROI) of BSC+MRP+RCM		16.2

Calculation of Internal Rate of Return (IRR) and Benefit-Cost Ratio (BCR)

The internal rate of return of introducing the Balanced Scorecard, projected to 2015 with a discount rate of 5%, yielded a net present value of $20.7 million; a discount flow net benefit of $2.5 million to $2.1 million for the years 2007 to 2015; an internal rate of return of 585%; and a benefit-cost ratio of 125. Details are presented in Table 38.

The internal rate of return of introducing the Magnet Recognition Program®, projected to 2015 with a discount rate of 5%, yielded a net present value (NPV) of $8.4 million; a discount flow net benefit of $1.7 million to $1.6 million for the years 2011 to 2015; an internal rate of return of 498%; and a benefit-cost ratio of 27. Details are presented in Table 39.

The internal rate of return of introducing the Balanced Scorecard, Magnet Recognition Program® and the revenue cycle management program, projected to 2015 with a discount rate of 5%, yielded a net present value (NPV) of $28.2 million; a discount flow net benefit of $2.5 million to $4.1 million for the years 2007 to 2015; an internal rate of return of 585%; and a benefit-cost ratio of 31.9. Details are presented in Table 40.

Table 38

Internal Rate of Return and Benefit-Cost Ratio for the Implementation of the Balanced Scorecard: 2005–15

Internal Rate of Return (IRR) & Benefit-Cost Ratio (BCR) - Balanced Scorecard (BSC): 2005 -2015

Undiscounted Flows	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Costs	-$65,848	-$21,441	-$22,084	-$22,747	-$23,429	-$24,132	-$24,856	-$25,602	-$26,370	-$27,161	-$27,976
Benefits			$2,768,975	$2,852,044	$2,937,605	$3,025,733	$3,116,505	$3,210,000	$3,306,300	$3,405,489	$3,507,654
Net	-$65,848	-$21,441	$2,746,890	$2,829,297	$2,914,176	$3,001,601	$3,091,649	$3,184,399	$3,279,931	$3,378,329	$3,479,678

Discounted Factors											
Discount Rate	5%										
Base rate	2005										
Year Index	0	1	2	3	4	5	6	7	8	9	10
Discount Factor	1.0000	0.9524	0.9070	0.8638	0.8227	0.7835	0.7462	0.7107	0.6768	0.6446	0.6139

Discounted Flows											
Costs	-$65,848	-$20,420	-$20,031	-$19,650	-$19,275	-$18,908	-$18,548	-$18,195	-$17,848	-$17,508	-$17,175
Benefits	$0	$0	$2,511,541	$2,463,703	$2,416,775	$2,370,741	$2,325,584	$2,281,287	$2,237,834	$2,195,209	$2,153,395
Net	-$65,848	-$20,420	$2,491,510	$2,444,053	$2,397,500	$2,351,833	$2,307,036	$2,263,093	$2,219,986	$2,177,701	$2,136,221
Cummulative	-$65,848	-$86,268	$2,405,242	$4,849,296	$7,246,795	$9,598,628	$11,905,665	$14,168,757	$16,388,743	$18,566,444	$20,702,665

Net Present Value	$20,702,665
Internal Rate of Return	585%
Benefit-cost ratio	125

Table 39

Internal Rate of Return and Benefit-Cost Ratio for the Implementation of the Magnet Recognition Program®:2009–15

Internal Rate of Return (IRR) & Benefit-Cost Ratio (BCR) - Magnet Recognition Program® MRP: 2009 - 2015

Undiscounted Flows	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Costs	-$55,125	-$56,779	-$146,528	-$77,976	-$80,315	-$82,724	-$85,206
Benefits			$2,047,341	$2,108,761	$2,172,024	$2,237,185	$2,304,300
Net	-$55,125	-$56,779	$1,900,813	$2,030,786	$2,091,709	$2,154,460	$2,219,094

Discounted Factors							
Discount Rate	**5%**						
Base rate	**2009**						
Year Index	0	1	2	3	4	5	6
Discount Factor	1.0000	0.9524	0.9070	0.8638	0.8227	0.7835	0.7462

Discounted Flows							
Costs	-$55,125	-$54,075	-$132,905	-$67,358	-$66,075	-$64,817	-$63,582
Benefits	$0	$0	$1,856,999	$1,821,627	$1,786,930	$1,752,893	$1,719,504
Net	-$55,125	-$54,075	$1,724,093	$1,754,269	$1,720,854	$1,688,076	$1,655,922
Cummulative	-$55,125	-$109,200	$1,614,893	$3,369,162	$5,090,017	$6,778,093	$8,434,015

Net Present Value	**$8,434,015**
Internal Rate of Return	**498%**
Benefit-cost ratio	**27.0**

Table 40

Internal Rate of Return and Benefit-Cost Ratio for the Implementation of the Balanced Scorecard, Magnet Recognition Program®, and the Revenue Cycle Management Program: 2005–15

Internal Rate of Return (IRR) & Benefit-Cost Ratio (BCR) - BSC, MRP & RCM: 2005 -2015

Undiscounted Flows	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Costs	-$65,848	-$21,441	-$22,084	-$22,747	-$78,554	-$80,911	-$171,384	-$103,577	-$106,685	-$214,635	-$217,932
Benefits			$2,768,974	$2,852,043	$2,937,604	$3,025,732	$5,163,843	$5,318,758	$5,478,321	$5,642,671	$6,961,635
Net	-$65,848	-$21,441	$2,746,889	$2,829,296	$2,859,050	$2,944,821	$4,992,459	$5,215,181	$5,371,636	$5,428,036	$6,743,703

Discounted Factors											
Discount Rate	5%										
Base rate	2005										
Year Index	0	1	2	3	4	5	6	7	8	9	10
Discount Factor	1.0000	0.9524	0.9070	0.8638	0.8227	0.7835	0.7462	0.7107	0.6768	0.6446	0.6139

Discounted Flows											
Costs	-$65,848	-$20,420	-$20,031	-$19,650	-$64,627	-$63,396	-$127,889	-$73,610	-$72,208	-$138,356	-$133,791
Benefits			$2,511,541	$2,463,702	$2,416,774	$2,370,740	$3,853,339	$3,779,942	$3,707,943	$3,637,316	$4,273,840
Net	-$65,848	-$20,420	$2,491,510	$2,444,052	$2,352,147	$2,307,345	$3,725,450	$3,706,332	$3,635,735	$3,498,960	$4,140,049
Cummulative	-$65,848	-$86,268	$2,405,242	$4,849,294	$7,201,441	$9,508,786	$13,234,236	$16,940,567	$20,576,302	$24,075,262	$28,215,311

Net Present Value	$28,215,311
Internal Rate of Return	585%
Benefit-cost ratio	31.9

Sensitivity Analysis

Sensitivity analysis is an essential component of a cost-benefit analysis. Its purpose is to describe the impact of changes in assumptions and variables within the model.

The cost-benefit analysis may be impacted by the baseline of the healthcare facility at the introduction time of these frameworks. For example, if the organisation's quality and safety, and efficiency and financial indicators are all above the mean of the national benchmarking dataset, whilst there is still scope for continuous improvement, these may be harder to realise and be at the margin and or constitute modest gains. Conversely, the lower the starting point, the greater scope there is to achieve significant benefits in performance.

In order to ascertain the sensitivity of the performance indicators chosen for this cost-benefit analysis, the net present value, internal rate of return and the benefit-cost ratio are recalculated for a range of values from ±1%, 5%, 10%, 20% and 30% of the total values for each of the benefits and costs that exceeded 10% of the totals values included in the model as detailed in Table 41.

Table 41 indicates that the sensitivity in this model ranges from a return on investment of 16.11 to 16.17 at –1% to –30%. This range is not large, as expected, given that the percentage increases are applied only to the major costs and benefits associated with the model. However, the percentage increases of +1% to +30% yielded a return on investment of 16.11 to 18.70, thus highlighting a greater sensitivity when positive values were applied. The benefit-cost ratio (BCR) was 31.9.

Table 41

Sensitivity Analysis – Return on Investment (ROI) and Benefit-Cost Ratio (BCR) for the Implementation of the Balanced Scorecard, Magnet Recognition Program®, and Revenue Cycle Management Program Recalculated with ±1, 5, 10, 20 and 30% for Each Value Exceeding 10% of the Total in the Model

SVPHS CBA Summary BSC + MRP + RCM	0%	-1%	-5%	-10%	-20%	-30%	1%	5%	10%	20%	30%
Reduction in # of Pressure Ulcers	$ 384,345	$380,502	$365,128	$345,911	$307,476	$269,042	$388,188	$403,562	$422,780	$461,214	$418,552
Reduction in # of Patient Falls	40,014	$39,614	$38,013	$36,013	$32,011	$28,010	$40,414	$42,015	$44,015	$48,017	$43,575
Reduced RN Vacancy, OT, Turnover, Agency	1,807,755	$1,789,677	$1,717,367	$1,626,980	$1,446,204	$1,265,429	$1,825,833	$1,898,143	$1,988,531	$2,169,306	$2,350,082
Reduction in WHPPD	2,000,000	$1,980,000	$1,900,000	$1,800,000	$1,600,000	$1,400,000	$2,020,000	$2,100,000	$2,200,000	$2,400,000	$2,600,000
Reduction in # of Needlesticks	16,974	$11,700	$11,700	$11,700	$11,700	$11,700	$11,700	$11,700	$11,700	$11,700	$11,700
Reduction in # of LTIs	48,000	$33,250	$33,250	$33,250	$33,250	$33,250	$33,250	$33,250	$33,250	$33,250	$33,250
Reduction in ALOS	448,956	$444,466	$426,508	$404,060	$359,165	$314,269	$453,446	$471,404	$493,852	$538,747	$583,643
Increase in RPBD	700,728	$693,721	$665,692	$630,655	$560,583	$490,510	$707,736	$735,765	$770,801	$840,874	$763,093
Estimated savings of the BSC+MRP+RCM	$ 5,446,772	$5,372,930	$5,157,658	$4,888,568	$4,350,388	$3,812,208	$5,480,566	$5,695,838	$5,964,928	$6,503,108	$6,803,895
Estimated costs of the BSC+MRP+RCM	$ 317,126	$313,955	$301,270	$285,413	$253,701	$221,988	$320,297	$332,982	$348,839	$380,551	$345,350
Estimated Return on Investment (ROI) with BSC+MRP	16.18	16.11	16.12	16.13	16.15	16.17	16.11	16.11	16.10	16.09	18.70
Benefits	3,882,022	$3,843,202	$3,687,921	$3,493,820	$3,105,617	$2,717,415	$3,920,842	$4,076,123	$4,270,224	$4,658,426	$5,046,628
Costs	(121,525)	-$120,310	-$115,449	-$109,373	-$97,220	-$85,068	-$122,741	-$127,602	-$133,678	-$145,830	-$157,983
Benefit-cost ratio	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9

Additionally, the internal rate of return was recalculated with discount rates ±2%, 5% and 10% from the base discount rates used to ascertain the duration sensitivity of the model detailed in tables F1 to F4 (in Appendix F, p. 291-294).

Table F1 indicates that when a –2% discount rate was applied to the model, the net present value yielded $45 million and an internal rate of return of 584%. When the cost/benefit base rates were applied from –1% to –30%, the net present value fluctuated, from $44.5 to $31.5 million respectively. Equally, when the positive rates were applied from +1% to + 30%, the net present value varied from $45.4 to $58.5 million.

Table F2 indicates that when a –5% discount rate was applied to the model, the NPV yielded $56 million and an internal rate of return of 584%. When the cost/benefit base rates were applied from –1% to –30%, the net present value fluctuated from $55.4 to $39.2 million respectively. Similarly when the positive rates were applied from +1% to + 30%, the net present value varied from $56.5 to $72.8 million.

Table F3 demonstrates that when a +2% discount rate was applied to the model, the net present value yielded $34.2 million and an internal rate of return of 584%. When the cost/benefit base rates were applied from –1% to –30%, the net present value fluctuated, from $33.9 to $23.9 million respectively. Likewise, when the positive rates were applied from +1% to + 30%, the net present value varied from $34.6 to $44.5 million.

Table F4 indicates that when a +5% discount rate was applied to the model, the net present value yielded $28.3 million and an internal rate of return of 584%. When the cost/benefit base rates were applied from –1% to –30%, the net present value fluctuated from $28 to $19.8 million respectively. Equally, when the positive rates were applied from +1% to + 30%, the net present value varied from $28.6 to $36.8 million.

The internal rate of return remained the same throughout the changes applied at 584%.

Chapter 5

Qualitative Component

The qualitative component of the study was undertaken to explore, qualify and present the data from interviews and focus groups with staff of the Hospital with respect to the implementation of the Balanced Scorecard, the Magnet Recognition Program® and the revenue cycle management program at SVPHS over the 10-year period between 2005 and 2015. It describes the cultural impact (or lack thereof) that these frameworks had or may have had on the human and social capital, which would have been reflected in the practice environment and the level of engagement of patients and staff.

The key words generated from the study using the QSR NVivo 10-word cloud are presented in Figure 25.

Figure 25. QSR NVivo 10-word cloud.

Findings

The thematic content analysis of the study identified four recurrent and prevailing themes, which encompassed the benefits and challenges of implementing the three improvement frameworks as well as leadership, operational excellence and quality and safety. These are now reported in that order.

Theme 1a – Benefits of implementing the three frameworks

All participants from the semi-structured interviews were well aware of and had a strong understanding of the aims and objectives of the Hospital's patient-centred care model. Most participants were aware of the Magnet Recognition Program® and cognisant of the Balanced Scorecard; some participants mentioned the revenue cycle management program, the Australian Council on Healthcare Standards and the Hospital's governance structures; a few participants touched on strategic plans, the Hospital's policy and procedures and the subject of research.

Participants from focus group 1, who as previously stated were all senior nurses, all had an extensive understanding of patient-centred care as well as the Balanced Scorecard and the Magnet Recognition Program®. Given that the revenue cycle management program was introduced in March 2014, whilst most were aware of this initiative, knowledge of this varied amongst the participants. Some of the participants also mentioned the Australian Council on Healthcare Standards' accreditation program as well as the nursing professional practice model used at the Hospital.

Participants from focus group 2, who were all direct-care nurses with a varied level of knowledge and experience, had a sound understanding of patient-centred care. Participants in this group did not explicitly mention the Balanced Scorecard, the Magnet Recognition Program® or the revenue cycle management program. However, in response to prompts, they

mentioned the Hospital's reporting system (which incorporated the Balanced Scorecard), policy and procedures, quality and safety (the Hospital's shared governance practice councils), and patient satisfaction surveys.

As previously stated, the Balanced Scorecard was implemented at the Hospital in 2005 and was embedded into the operations of all the clinical units and nursing departments. This research study examines the impact of the Balanced Scorecard on the Hospital's operations for the 10-year period from 2005 to 2015.

From the semi-structured interviews and focus group 1, most participants had a significant understanding of the Balanced Scorecard and its impact on their practice, describing it "as a tool to provide strategic direction". A participant mentioned the four perspectives of the Balanced Scorecard, namely, the customer; the internal process; the people; and the financial. Some of the participants had quite a sophisticated body of knowledge about this framework, mentioning its origins from the Harvard Business School. They also mentioned strategy maps as a source of communication and strategic focus. Most of the responses were positive about the Balanced Scorecard, with a smaller number of negatives highlighted below within the "challenges" section.

In terms of its benefits, participants included the Balanced Scorecard's capacity to assist the Hospital in developing its strategic plan in line with a shared vision and remaining true to its mission. The tool provided focus to the organisation to enable it to concentrate on what matters, described by the participants as "contributing to and strengthening quality and safety and commitment to patient-centred care".

For example, respondents highlighted that the Balanced Scorecard is:

- all about quality and safety for patients

- about leading – just that we're not sitting back on our laurels
- probably the tool that is most shared with clinical staff
- ultimately for better patient care
- setting us apart from other places.

Setting objectives, measures and targets were highlighted as providing guidance to deliver excellence towards improving patient outcomes. Participants also discussed the Balanced Scorecard as being helpful in assisting all clinical areas to measure and report on what they do, as well as helping them to meet and strive to exceed their key performance indicators. Some participants alluded to the Balanced Scorecard as helping them by "measuring the percentage of patients pre-admitted", "the percentage of patients risk-assessed", as well as "measuring and reporting on nurse-sensitive indicators such as patient falls, medication incidents, pressure injuries and others".

The Balanced Scorecard was described by some participants as "a principal domain of nurse unit managers", and that managers were a bit more aware and familiar with the framework. However, it was also found to be greatly beneficial in that the Balanced Scorecard had been implemented throughout all the clinical units and nursing departments within the Hospital. It was also reported by participants that the Balanced Scorecard was being used to set performance agreements with nurse managers and these individuals were then appraised using the Balanced Scorecard framework.

Staff development and culture were alluded to in terms of the Balanced Scorecard's focus on the people perspective and its emphasis on learning and growth. For example, participants mentioned measuring percentages of nurses with tertiary qualifications, numbers of nurses undertaking postgraduate courses and numbers of practice development and research activities

in clinical units as equipping the staff with the skills to deliver quality and safe patient-centred care.

A participant said "*the biggest thing is that we invest in staff development and culture, because if we get those things right, then we have a good system of delivery of care*".

Some participants referred to the Hospital's not-for-profit status and their capacity to talk about finances within the Balanced Scorecard framework. Meeting financial targets so that the hospital remained viable and sustainable was stated as a great benefit by several participants. For example, "now it is okay to talk about money" and "we've been given permission to talk about the financial side of things".

The Australian Council on Healthcare Standards accreditation program, the Magnet Recognition Program®, the revenue cycle management program and the nursing professional practice mode were mentioned by participants and linked to the Balanced Scorecard. These were seen as being assisted by and or supplemented by the Balanced Scorecard, with its broader focus on the whole organisation and its structures and processes. The Balanced Scorecard was seen as assisting the Hospital in providing data for the Magnet re-designation documentation submission. Participants commented that:

> The Balanced Scorecard brings everything together but in a balanced kind of way; as humans, we need to; we like to make some linkages; know where we belong and how everything fits together. Ultimately, the Balanced Scorecard is for better patient care and it sets us apart from other places.

Others noted "this tool attempts to measure the unmeasurable through patients and staff satisfaction. It focuses the staff on improving patients' outcomes and patient centred-care, and it helps us with our mission and patient care".

Unlike focus group 1, the focus group 2 participants were all direct-care nurses with a lesser degree of seniority and authority within the Nursing Directorate. These participants had a lower degree of knowledge and understanding of the Balanced Scorecard and its impact on their practice. They did, however, mention the Balanced Scorecard's ability to provide direction, its capacity to set standards, measure what needs to be done, communicate information at meetings, and facilitate benchmarking.

In reference to the Magnet Recognition Program®, despite it being introduced only in 2009 and the Hospital being designated in 2011, it was the framework that was most familiar, embraced and understood by all participants. It was regarded as adding value to the Hospital, the Nursing Directorate and, most importantly, to the Hospital's commitment to deliver improved patient outcomes within a patient-centred care model.

The main benefits perceived by participants were that:

> The Magnet Recognition Program® is an evidence-based nursing excellence model that primarily focuses on delivering improved outcomes within a patient-centred care model. Being an international program and considered a highly prestigious framework allowed us to compare ourselves within the international healthcare market.

Being the first private Magnet designated hospital in Australia was alluded to by most participants as "a further feather in our caps".

Most participants mentioned that the Magnet Recognition Program® was about "giving the best care; trying to be the best; working together, driving and striving towards excellence as well, sustaining that level of performance over time".

Some mentioned that the Magnet Recognition Program® was "a step above the Australian Council on Healthcare Standards accreditation program". The Magnet Recognition Program® was about not just meeting the standards but excelling in them. It was perceived as providing a

great acknowledgment and recognition of nursing as well as enabling the Hospital to retain and attract nursing staff and doctors, allied health practitioners and support staff.

It was described as "a worthwhile program that relies on leadership to drive it and sustain it". It was referred to "as having made a huge difference; being at the cutting edge; have made us a little bit better than others; and had set us apart from everyone else". It was also described as "the Hospital being a leader in health care, particularly in nursing".

Other participants noted that "within the Magnet Recognition Program® it is easier to manage people and it helps managers as people feel good coming to work at the hospital".

Another major benefit of the Magnet Recognition Program®, highlighted in the participants' responses, was related to the "practice environment", espoused by the shared principles and values of this framework that promote greater nursing autonomy, empowerment and investment in the culture of the organisation. Investment in the practice environment can help build strong multidisciplinary teams with a common purpose of delivering continuous improvement in patient-focused outcomes. All of these were seen as contributing to a strong practice environment, which respondents said "has changed for the better and so much over the past few years". A participant said "*it is like watching a child grow; they take their first little steps and then they stride and then they run".*

Some respondents mentioned that the Magnet Recognition Program® had provided a structure and process to undertake innovative initiatives for the patient's best interest and outcomes. It was clearly stated "that the people who benefit most from this program are the patients". The program was also seen by some participants as "uniting nurses from the inpatient and operating theatre areas, speaking the same language and using the same business processes".

Magnet was discussed as having added a "big push" to continually achieve and improve safety and quality standards and outcomes. Some respondents noted that "the Magnet Recognition

Program® is all about patient-centred care and exceeding the patient experience". "It is all about nurses and communicating with multidisciplinary teams", and "It makes the hospital a better place to work in, better for our patients and better for our staff". Other respondents saw the Magnet Recognition Program® as a framework for the Hospital to continually learn and grow, in particular in the area of research.

Some participants expressed their views as *"I don't think that we don't do Magnet; it's just that we don't box it"; "we do Magnet every day, we just don't recognise it"; and, "it's a cultural thing as well as it's a different language*".

Magnet was seen by some participants as business as usual and difficult to measure or express as a separate (or over and above) commitment from what nurses should already be doing in pursuit of patient-centred care. In relation to patient-centred care, all participants had an extensive understanding of this concept. Most indicated that this was nothing new and reflected their reason for being nurses and the driving force behind their practice.

Interestingly, focus group 2 participants, mainly clinical nurses, referred only to the perceived benefits of this model, unlike those in focus group 1 (senior nurses), who highlighted a number of perceived challenges and implementation issues related to delivering a patient-centred care model. The main benefit associated with this model was described as care being centred on the needs and preferences of patients and their families. It was repeatedly stated that "this model must focus on holistically meeting the individual personal beliefs and cultural wishes (of patients and their families)".

Individualised care was mentioned as a major consideration in the provision of care. Treating everyone the same was not an option according to some participants. Acknowledging that patients are all different and considering not only the physical but also the psychological needs

was noted as another key consideration of being patient-centric. Not looking at a patient just as an illness was highlighted as a crucial factor to delivering comprehensive patient-centred care.

Choice was highlighted as a factor that clinicians need to consider and honour when caring for patients and their families. "Respecting and advocating for patients" was clearly stated as a role of nurses caring for patients. Involving patients and their families in decisions related to their care was seen as an essential component of being patient-centred. A participant noted *"patient centred-care is keeping the patient in the back of your mind with every decision you make about their care. Keep the patient, as a whole, fully aware, informed and involved. Patients are at the centre of everything"*.

Many participants alluded to the Magnet Recognition Program® "as a vehicle to focus carers towards fulfilling the needs and preferences of their patients". Patient experience was highlighted as a major and significant by-product of delivering patient-centred care. Better patient outcomes was also stated as being the result of providing inclusive and personalised care, and was described as "doing what's right".

Leadership and "leading by example" was mentioned by some participants as being crucial for delivering patient-centred care. A participant commented that *"leadership and how it fits with patient-centred care… it's massive"*.

Implementation issues from participants related to the capacity of the organisation to act on patients' feedback. There was a perceived need to reach a consensus of what is reasonable in terms of a patient-centred care model. Quality and safety were implicitly stated as taking priority when it comes to being patient-centric.

Leadership was again a significant feature in participants' responses. Their comments related to the responsibility of leaders and managers to set the agenda and be effective in holding their teams accountable. A participant mentioned that *"teams need to be led very well, by example,*

and you can't change things and lead on your own". It was suggested by some participants that "nurses who enjoy what they do, respect their leaders and have faith and trust in their managers". Having clarity about the set standards and what is expected from each member of the clinical team creates a practice environment (and culture) conducive to delivering improved patient outcomes.

The culture of the organisation was defined by many participants as being crucial in pursuing and achieving a patient-centred care model. "Staff engagement", "empowerment", "autonomy" and "striving for excellence in practice development, research and innovation", were mentioned by participants as key elements of a culture equipped and committed to the pursuit of patient-centred care.

Interestingly, and leading to the next area of revenue cycle management, a participant noted "*in patient-centred care, the patient is the goal. I see patient-centred care differently. The patient is the person bringing the funding in, not the doctor. The patient has a choice; they select the doctor, and they select the hospital"*.

This sentiment appears to relate to participants' concerns with patients being able to access, and being able to afford to be cared for at the Hospital. It may also relate to the doctor's realisation that, ultimately, it is about patients being able to do so.

The revenue cycle management program was introduced at the Hospital in March 2014, and it was the newest framework implemented, with the aim of improving the financial performance of the hospital. It focused on achieving an appropriate average length of stay; improved documentation and coding of inpatients' episodes of care; and optimising revenue collection by capturing whatever reimbursement the hospital is entitled to, reflecting accurately the actual care provided to patients. Given the nature and clinical focus of this initiative, it is not surprising it captured a high level of interest amongst respondents. Most participants from both the

interviews and focus groups understood the purpose of this initiative and the impact that it may have on their practice. A participant said "*the revenue cycle management program is the business model that we use to make sure that we're sustainable; that we can do what we can do to support our goal and vision*. The overall benefit of this framework was described as "improving on the management of length of stay, with an emphasis on achieving an appropriate average length of stay". Participants were aware of the penalties imposed by private health insurance funds on not achieving the negotiated length of stay. Participants also alluded to the risk of a shorter length of stay, which would increase the possibility of unnecessary readmission to hospital, with its adverse financial consequences to the Hospital.

Most respondents noted that achieving financial viability and sustainability was essential for the Hospital. Some respondents mentioned revenue per bed day; cost per patient day; profit; earnings before interest, tax, depreciation, amortisation and rent; as being key performance areas for the Hospital.

Some participants linked the revenue cycle management initiative as part of being able to deliver patient-centred care. Others described this initiative as one "geared to reduced waste and achieve best possible value for money". The revenue cycle management program was described as being "an organisation-wide strategy rather than solely a nursing strategy", despite the fact that it was a nursing-led initiative.

Improving clinical documentation was reported as being key to the overall success of the revenue cycle management program. A respondent made her point by saying *"I mean we wouldn't be able to function if we couldn't make a profit so revenue cycle management is obviously a huge part of that"*.

This initiative was seen by some participants as critical for the funding of a "new hospital" and the refurbishment of the existing buildings.

Theme 1b – Challenges of implementing the three frameworks

In relation to challenges with the Balanced Scorecard, focus group 2 participants did not identify any challenges with this framework. Most challenges came from the semi-structured interviews and focus group1, and some participants mentioned *"there is a need to go back to basics, as well as to provide additional and regular education sessions about the Balanced Scorecard*". A respondent also mentioned that *"direct-care nurses don't think about the finances",* highlighting a need to make the framework more relevant to clinical nurses within the financial perspective of the Balanced Scorecard. A participant mentioned that *"the Balanced Scorecard monthly scorecard report used to be discussed at monthly meetings and these days is not necessarily happening on a regular basis"*. Once again, this points to the importance of not assuming nurses have an embedded knowledge of the framework, and planning for regular education refresher sessions about the purpose and utility of the Balanced Scorecard should be introduced.

It was mentioned as a challenge that the Balanced Scorecard is not a St Vincent's Health Australia organisation-wide framework, and it is adopted in a modified version outside of nursing within the Hospital. The limited adoption of the framework within the entire Hospital and broader organisation diminishes the potential utility that it could have if the framework had been more broadly adopted. Having different systems locally to those of the larger organisation creates additional reporting and energy to maintain dual management systems. St Vincent's Health Australia, the parent organisation that consists of 27 healthcare facilities, has not adopted the Balanced Scorecard and uses a modified management reporting tool with scorecards, which all the facilities, including SVPHS, are compelled to use, thus creating the dual reporting regime.

Some of the measures and targets, including nurse-sensitive indicators, processes, patient experience and financial outcomes, were increasingly stretched and seen by participants as an ongoing and ever increasing challenge to meet. This sentiment may reflect the participants' perceived strategy of increased centralisation and standardisation being promoted by St Vincent's Health Australia.

Some participants stated that registered nurses are not business-minded individuals and do not necessarily think in terms of business frameworks; they are nurses and their focus is not about the finances, it is about patient care delivery. There is, the participants noted, an over-preoccupation these days with money and wasting money in the broader St Vincent's Health Australia organisation. For example, a participant stated *"I groan whenever I see the Balanced Scorecard. I can't stand it".* This comment was expressed by a participant reflecting her frustration with the Balanced Scorecard being used as a managerial tool as it was not seen by her and potentially by other staff as a useful tool to assist clinicians to focus on quality and safety.

Implementation issues mentioned in all the interviews and by the focus groups were related to the Balanced Scorecard not being adopted organisation-wide, which suggested a possible threat to the framework's influence, or that it could be abandoned by the Hospital in the future. Some participants noted that "clinical nurses were not necessarily thinking about the Balanced Scorecard in their day-to-day practice", and that "the Balanced Scorecard is not necessarily on their radar". Again, some participants reiterated that there is a need for ongoing regular education sessions about it, while another noted that *"we tend to focus and report on the things that are going well and do not always focus on the things we are not doing well".*

The term "Balanced Scorecard" was mentioned by respondents as "creating a language problem for many clinical nurses and they do not refer to it as Balanced Scorecard but call it

ScoreTrak®". This phenomenon is not unusual as people can tend to identify more with the tool (in this case ScoreTrak®). Other implementation issues referred to by some participants were related to the Balanced Scorecard not capturing a broader range of activities and initiatives that nurses are involved with.

For example, some participants said *"we don't actually reflect on all the hard work and all the initiatives being put in place to actually make things happen"*. Another respondent mentioned that *"without the marriage of all of those things that the Balanced Scorecard entails, your results will not be as successful"*.

In reference to challenges with the Magnet Recognition Program®, most of those emerged in a similar fashion to those for the Balanced Scorecard from both the semi-structured interviews and the focus groups. A participant spoke of *"being in two minds about the virtue of the Magnet Recognition Program*®". This was related to being perceived by several participants as "producing a great deal of work". Others used more colourful language and described it as "being damn hard work", "headache material" and "increasing stress". Some participants referred to the language of Magnet being so different to what they used and to the challenge of "keeping the lingo alive".

Patients, who were not always aware of the Hospital being a Magnet hospital, were perceived as a challenge by some participants. Similarly, being known as a Magnet-designated facility, could at times generate unrealistic expectations and unwarranted criticism. For example, a participant said *"a negative experience will be told to 50 people but for a positive one, they'll just be happy with it; they might tell five or 10 people"*.

The issue of not celebrating enough was seen as part of a communication gap. A need was felt to articulate more broadly what the Hospital was doing and celebrate its successes. Some participants argued that in Australia *"it's a cultural thing as well as that it's a different*

language" and *"we never jump up and down or celebrate, whereas in the States [it] is part of their culture to really celebrate"*.

A participant mentioned that despite the improved practice environment and a strong culture, there was still an "us and them" attitude amongst some staff members. Respondents mentioned that there was a need to improve consultation with the staff before implementing new projects. There was also growing resentment about the requirement of undertaking electronic risk assessments that were considered laborious and somewhat irrelevant. Communication with staff about the reason for success in achieving certain outcomes was considered a challenge and priority. People needed to understand how the Hospital has been able to achieve the outcomes so that they can replicate them and spread them across the whole organisation.

The qualification requirements for nurses embedded in the Magnet Recognition Program® were considered a significant challenge not only from the Hospital's perspective but also more broadly from across the healthcare industry for those facilities considering undertaking the Magnet journey. A participant made the point that it is imperative the Hospital continually strives for improvement and innovation and that *"there must be no resting on our laurels"*.

Implementation issues from across interviews and focus groups related to the Magnet Recognition Program® not being perceived as the only catalyst for increased performance within the Hospital. Some participants described the Magnet Recognition Program® as a "look alike" already being in place at the Hospital prior to its successful achievement in 2011. In other words, that the Hospital, prior to achieving Magnet designation, was already a "Magnet like" facility, displaying the expected standards of quality and safety, patient and staff engagement and experience that the Magnet Recognition Program® requires.

Magnet Recognition was described as measuring what the Hospital was already doing, particularly where it related to building a strong and engaged culture and the prevailing high levels of patient satisfaction and experience.

In reference to patient-centred care, the main challenge perceived by participants was that patient-centred care is *"nothing new".* It was described as *"a bit of a term that we like to use".* Some stated *"we've always done it".* Some participants, in fact, expressed resentment about the fact that patient-centred care had now been reinvented and that there was no acknowledgment that past staff and the Hospital's current clinicians had been attempting to deliver patient-centred care for a very long time. A participant, perhaps somewhat cynically, suggested that patient-centred care is *"a new label to give someone else a job"*. Another participant hoped that *"patient-centred care doesn't become [simply] about ourselves or the organisation".*

Another major challenge with patient-centred care was discussed as being a "foggy area", undefined and difficult to have a common or shared understanding across the healthcare system.

Affordability issues were mention by some participants as creating difficulties in accessing and delivering care to patients. These were related to private health insurance funding, increasingly adding exclusions to their members' contracts. Patients' out-of-pocket expenses or gaps were also highlighted as adversely impacting on the provision of patient-centred care. Furthermore, it was also strongly mentioned by participants that these financial difficulties were creating great concerns amongst patients and their families, once again adversely impacting on patient satisfaction and the overall patient experience.

The last challenging area described by participants related to attempting to meet the ever-increasing expectations from patients and their families that were alleged to have been fuelled by the promise of delivering patient-centred care. These challenges were described as "relating

to meeting social and psychological needs of patients and their families", "constant interruptions from relatives" and "their push for medical emergency team activations" [met calls]. Met calls were being promoted as a quality and safety feature whereby relatives could activate an alert system, if and when, they considered that the patient required urgent attention.

The lack of a "multidisciplinary" approach to care was seen as a significant challenge, in particular for a private hospital where the consulting doctors were not members of the Hospital staff and neither were the allied health professionals. Interdisciplinary communication and case conferences were seen as key measures in providing patient-centred care. These measures were lacking and needed to be addressed.

A few participants were critical of the perceived inconsistencies of promoting patient-centred care and not appropriately resourcing it. Others, however, were adamant that the increasing pressure on the Hospital to generate higher profit margins was eroding goodwill amongst the staff, characterised by the following comments: "Back off a bit. The EBITDAR (profit margin) keeps going up. When is enough, enough?"; "We are at a breaking point"; and "It is becoming ridiculous and demoralising [to focus so heavily on the financial 'bottom line']".

Most of the challenges in this area were related to the participants' anxiety and frustration of over-promising and under-delivering when it comes to delivering a patient-centred care model.

In relation to the revenue cycle management program, clearly, this topic was perceived by participants as an increasingly challenging area for the Hospital and more broadly for the healthcare industry at large. The main challenge perceived by participants was that financial imperatives have reached a level of importance that outweighs other clinical ones. Participants mentioned that "This is a big issue in general in the healthcare industry at the moment". Some stated that "our money and our financial situation have actually diminished lately". Others referred to cuts being implemented at the Hospital, including "newspapers not being supplied

free of charge to patients"; "patients not appreciating it" and "nurses having to cope with criticism". A participant stated *"I haven't forgotten what it's like to be a frustrated clinical nurse".*

Some participants indicated that "changes are coming from much higher up"; "St Vincent's Health Australia seems to have made an impact on how we run"; and "we seemed to be better off a year or so ago or two years ago". One participant commented that *"We have come a bit down in par with other hospitals".* This comment related to the strongly perceived effort from St Vincent' Health Australia to standardise processes and systems, which include health contract price negotiations. Prior to this effort, it was reported that the Hospital had greater autonomy and enjoyed higher rates of health insurance reimbursement.

Others stated that "we've become dollar driven"; "there is a mismatch between the three frameworks, from a nursing point of view"; and "you're being squeezed every which way financially".

Documentation and the lack of it, was seen as a major challenge, in particular, doctor documentation. This was linked to the clinical coders' inability to correctly code the inpatient episode of care.

Several participants discussed doctors' fees, stating "the cost of doctors' fees are impacting adversely on the Hospital"; and "it affects a lot of people and our reputation".

Private health insurance funds were seen as major contributors to the financial imposition placed on the private sector and, in particular, on their members, by increasingly adding restrictions to their members' policies. Some respondents also mentioned about private health insurance funds not being willing to negotiate a reasonable contract with private hospitals. This was described by participants as "unsustainable into the not too distant future". Others alluded

to sacrifices to be made with the many changes adversely impacting on the provision of private health care.

Implementation issues from direct-care nurses in focus group 2 related to the unwillingness to concern themselves with financial issues: "we're nurses, we have nothing to do with money"; "we keep care and money separate"; "we're here to care for our patients"; and "accounts are directed to the department downstairs".

One participant stated that *"Financial matters don't filter to us"* and *"we have a different focus"*. Others understood and mentioned that: "we need to focus on resources"; "reduced waste"; "correct diagnosis"; "coding"; "correct payment"; as all of these "affect our revenue stream".

Theme 2 – Leadership

Leadership was assessed by participants across both the semi-structured interviews and focus groups as being the single and most influential factor in the Hospital's capacity to provide and deliver an accountable and sustainable patient-centred care model. Being true to the mission of the Hospital and being able to develop, engage and share its vision with the staff was seen as a fundamental requirement for patient-centred care to become a reality. It was clearly articulated by many participants that the Hospital is a mission-based and not-for-profit hospital, and it was up to the leadership of the organisation, to not only preserve this status, but, most importantly, to also promote it. Some participants expressed their concern about the perceived high doctors' gaps (or patients' out-of-pocket expenses) impacting adversely on the hospital's long-term sustainability. One participant commented *"It [the mismatch between the fee a doctor is able to charge and what the dollar amount the health fund will reimburse the patient] affects a lot of people and our reputation"*. It was felt that the Hospital's leadership would need to address

this difficult situation at some point, preferably sooner rather than later. Leadership was described as "being charged with the role of formulating the vision of the organisation and setting and communicating the direction throughout the organisation and its people". Some participants expressed concerns about St Vincent's Health Australia "setting a different agenda and direction that may impact on the Hospital's long-term sustainability".

In terms of achieving an accountable and sustainable patient-centred care model, participants articulated that the organisational leaders need to define what they desire from a patient-centred care model and ascertain more clearly how it can be measured. Leadership was viewed by participants as also "developing strategies and key priorities to achieve its [the Hospital's] mission and vision". An essential component of leading was considered by respondents as being willing to adopt, embrace and successfully implement appropriate and enduring frameworks (processes and systems) to achieve the Hospital's desired outcomes. Respondents stated that "the Balanced Scorecard has assisted the Hospital in formulating its strategic plan and keeping us on track to provide care and meeting our goals and expectations". A participant suggested that *"the Balanced Scorecard keeps us honest about what we're doing and how we are performing"*.

The introduction of the Magnet Recognition Program® was described by participants as being a strategic leadership response to be at the cutting edge of health care, differentiating ourselves, and placing the Hospital in the international arena of highly performing hospitals. "Driving and striving for excellence" was seen by respondents as leadership in action, demonstrated by the Hospital becoming the first Magnet private hospital in Australia and in the southern hemisphere. A great sense of pride was clearly expressed by respondents and seen as the Hospital's leadership delivering on "leading".

It was raised by participants that The Magnet Recognition Program® could be better promoted locally within the Darlinghurst campus [of Sydney] and more broadly within St Vincent's Health Australia and beyond. It was felt that this would be a true expression of leadership.

The Magnet Recognition Program® was described as "a big cultural shift for us", further uniting the different departments in the Hospital. In particular, it was felt that celebrating the organisation's successes had not been a strong cultural expression until recent times and whilst that was changing, it needed to change more into the future.

Culture in general and "the way we do business here" was evident from all of the participants' responses. For example, in relation to patient-centred care, many respondents felt that "patient-centred care had been a strong feature in the hospital for generations". This sentiment was linked to the excellent reputation that the Hospital had enjoyed over many years. It was also backed up by respondents mentioning "the level of patient satisfaction and experience at the hospital", which was described as "outperforming most peer healthcare facilities".

Leadership and culture were seen as key elements to the pursuit of nursing excellence. "Not resting on our laurels" was mentioned by several participants. The danger of becoming complacent was perceived as a risk for a highly performing culture. "Excellence" was described as one of the Hospital's values that had driven the organisation to continually look for new and innovative programs and frameworks to deliver improved patient outcomes.

The implementation of a revenue cycle management program, the newest one, was viewed as "another leadership response to the ever-increasing challenge faced by healthcare facilities nationally and all over the world".

There was a growing concern amongst direct-care nurses of the greater focus on financial management, improved efficiency and performance. This was clearly articulated and described

earlier in this chapter and, in particular, when it came to discussing the implementation issues with the revenue cycle management program.

Direct-care nurses in focus group 2, and a few other participants, vented their feelings and displeasure with some of the changes, which were perceived by them as impacting adversely on them and on their capacity to deliver patient-centred care. These changes were perceived as relating to financial constraints, as well as many of the recent changes originating from an attempt to standardised processes and systems across St Vincent's Health Australia. Participants felt that leadership was once again pivotal in "making things happen". A participant stated:

> *Leadership… if you think about each of those frameworks, they're all really nursing driven, so none of them has been placed upon us by anyone. They've all been generated from within the Nursing Directorate. I think that's a real strength of the different frameworks as well. It demonstrates the impact that we can have on patient care and ensuring that we remain sustainable moving forward.*

The implication of this statement is that greater consultation and collaboration is required as a key function of effective leadership in advancing the strategy, vision and overall mission of the organisation.

Theme 3 – Operational excellence

Operational excellence was a prevailing theme that emerged from all the interviews and focus group responses. To begin with, governance was referred to as "being strengthened by the introduction of the Balanced Scorecard in 2005". According to some participants, this strategic management tool has assisted the Hospital by providing a "nice framework" to view the organisation in a "balanced way" from the four perspectives of the tool. Being able to derive the strategic plan, with clear objectives, measures, targets, initiatives and accountabilities, was

perceived as its major governance strength. Having successfully embedded this framework into the operations of all the clinical areas and used it as the basis for managers' performance agreements, it was seen as a pivotal governance strategy.

As part of governance – having set the expectations, and having established a mechanism to routinely measure the performance of all clinical areas, as well as regular reporting – significant value-added steps towards improving the existing patient-centred care model had been made. Greater accountability and holding people responsible for the stated objectives and targets was again perceived as achieving operational excellence. As a participant noted *"the frameworks are good as they help to guide us in what we aspire to do. They assist with accountability and help with achieving sustainable patient care, which all leads to improved patient outcomes".*

The ability for all direct-care nurses to access monthly results through ScoreTrak®, the electronic management and reporting tool introduced to automate the Balanced Scorecard, was also perceived by participants as "a major improvement in governance and operational excellence".

The ownership of the Balanced Scorecard, primarily by managers, but reasonably well understood and supported by direct-care nurses, was overwhelmingly considered by some participants as a milestone in the governance history of the Nursing Directorate at the Hospital. A participant mentioned that *"having superior structures, both human and physical, as well as advanced processes had enabled the Hospital to remain as a leader in health care as widely perceived by the healthcare industry".*

Respondents felt that attaining an enhanced patient-centred care model required achieving operational excellence through improving on the Hospital's processes and systems. Direct-care nurses and the entire clinical team, including support services, were crucial to drive this effort. It was felt that "it required an engaged culture prepared to go the extra mile [by] embracing new

ways of making a difference". It was made abundantly clear by some participants that many direct-care nurses often struggled to take on board what may have been perceived by them as "management jargon". In this case, respondents were referring to the Balanced Scorecard, and many nurses called it ScoreTrak® rather than Balanced Scorecard.

The Magnet Recognition Program® was considered by one participant as *"a ground-breaking and historical step towards enhancing operational excellence within the nursing service and the Hospital more broadly"*. The achievement of Magnet designation in 2011 was seen as "a momentous move towards the Hospital's commitment of delivering an enhanced patient-centred care model". Whilst some participants stated that "Magnet is what we do and achieving Magnet designation was in recognition and an acknowledgment of what had been happening in the hospital for many years", other participants expressed the view that "the Magnet Recognition Program® had provided the Hospital with an improved framework because it was evidence-based, and it was a nursing excellence program".

Respondents alluded to the many benefits that have been achieved as a consequence of the Magnet Recognition Program® such as greater autonomy in decision-making through the introduction of shared governance and nursing practice councils. The development of a professional practice model was also suggested as a significant step towards greater operational excellence, accountability and improved patient outcomes. The substantial investment in practice development and research was considered by most participants as "another great initiative towards improving practice and better patient outcomes of care". Education and professional development was referred to as a "sizeable strategic outlay by the Hospital in partnership with chosen universities".

The culture of the organisation was described as having significantly improved as a result of the journey towards Magnet recognition. The sense of pride and the staff's continued

commitment to the Magnet Recognition Program® was all but palpable throughout the combined interviews and focus group sessions. The emphasis on creating a practice environment where nurses felt welcome, valued and nurtured was seen as pivotal in not only retaining and attracting staff but also, more importantly, in generating improved patient outcomes and superior patient experience. As a participant noted "*Magnet has given us the structures and processes to offer our staff opportunities to have a say and feel empowered and listened to"*. Other comments were "it keeps nurses in high regard"; "it provides a huge focus on nurses and nursing, and acknowledges what nurses do, and encourages them to be better than they already are"; and "it has united the different departments in the Hospital because we are all speaking the same language".

Participants suggested that the Magnet Recognition Program® was used as "a tool to empower nurses", and "it's done at SVPHS big time". Continually offering staff opportunities to advance and to have a say in how things were done was seen as a most valuable expression of working together within the Magnet Recognition Program®. Other comments were "there has been a huge focus on nurses, acknowledging what they do and encouraging them to be better"; "we're definitely getting better and I think that it can be attributed to Magnet"; "there is less of the old them and us – you're now one of the leaders"; the Magnet Recognition Program® has made the hospital a better place to work"; and "it is better for our patients and better for staff".

This sentiment was augmented by a participant noting that "*our nurses are selling our patient care and this is where Magnet comes in and this is where the patient satisfaction and all that, and managing our goals and all that comes from the Balanced Scorecard"*.

An overwhelmingly clear theme from the interviews and focus groups was the great awareness that achieving operational excellence requires a repertoire of the right tools, processes and frameworks that can be driven by engaged, capable staff. The increasing emphasis on financial

performance, budgetary constraints, and the diminishing sources of funding from private health insurers was evident from the participants. There was a realisation that a greater focus needed to be applied to pursuing greater efficiencies, economies of scale, and a reduction in waste for the long-term viability, sustainability, prosperity and growth of the Hospital. A participant commented *"we need money to grow the business and being accountable for the cost. We need to ensure that care is efficient and effective".* Another comment was "it is how everything is funded and we need to maximise revenue and put it back into patient-centred care".

The revenue cycle management program was largely seen by participants as a "must have", as an initiative that had to be communicated and distributed throughout the Hospital and beyond. Many respondents, as highlighted earlier, expressed frustration with the amount and pace of change, and were critical of agendas, motives and possibly inappropriate strategies that were being imposed from St Vincent's Health Australia (Organisational Chart in Appendix P, p. 334).

It was made clear that the Balanced Scorecard and Magnet Recognition Program® needed another framework, complementary and/or supplementary to them. It was argued by a few participants that it was an imperative to not only continue with setting the direction and strategy with the Balanced Scorecard and working towards nursing excellence and improved patient outcomes with the Magnet Recognition Program® but to also assist the Hospital in improving its financial performance and sustainability with a revenue cycle management program. As a participant noted:

> *The revenue cycle management program makes the Hospital more sustainable. It is about ensuring an appropriate length of stay and funding. It is about the correct revenue cycle being from the time the patient presents to the Hospital until he/she leaves. It is about adequate and relevant documentation and coding of the patient's record. It is also about minimising waste and optimising revenue.*

Theme 4 – Quality and Safety

Quality and safety were universally perceived by participants as "fundamentally the reason for the Hospital's existence as a mission-driven healthcare facility".

Patient safety was collectively embraced as the single key imperative of a patient-centred care model. Quality was also perceived by respondents to go "hand-in-hand" with safety, and the third ingredient of a patient-centred care model was generally considered to deliver a positive and rewarding patient experience.

The Balanced Scorecard, according to most respondents, provided a framework to focus on the needs of the Hospital's prime customers – the patients. These needs related to safe and quality patient-centred care. With agreed safety and quality objectives, measures, targets, initiatives and accountabilities, this framework was embraced as an accountability, performance and reporting tool. Participants alluded to the many nurse-sensitive indicators that are routinely measured, evaluated, benchmarked and reported as being an integral part of the Balanced Scorecard framework. All of these measures were undertaken in an effort to deliver safe, quality care, with a view to continually improving patients' outcomes as well as positively impacting on their perception of the care they experienced.

The Balanced Scorecard was described as "a tool to assist with the various stages of the patient's journey through the hospital, including pre-admission, the inpatient's episode of care, and the discharge care process and beyond".

Risk assessment was seen as key indicator within the Balanced Scorecard as it relates to the pre-admission centre. This was highlighted by a participant explaining the impact of the framework on their practice but most importantly on *"driving and striving for an improved patient-centred care model"*.

Seeking independent, professionally administered patient feedback was considered by several participants as "a major source of invaluable input to strengthen the Hospital's quest for continually improving in this area".

The Magnet Recognition Program® was equally regarded by participants as "having lifted the bar and re-focusing the Hospital to achieve a safer, improved quality and superior level of care". Providing evidence-based guidelines and a strong commitment to new knowledge, innovation and improvement, respondents stated that "the Magnet Recognition Program® had assisted the hospital with the development and implementation of greatly needed services". These included mental health, acute stroke management, rapid assessment neurological services, Parkinson's disease management as well as others. All of these services were dependent on the development and up-skilling of the nursing staff, facilitated by the commitment to structural empowerment and exemplary professional practice.

Quality and safety were perceived by some participants as "not necessarily dependent on Magnet recognition". Some argued that "quality and safety priorities had already been in place and the Hospital was a 'Magnet like' hospital prior to its designation in 2011". The improved practice environment was, however, widely recognised by most participants as "having contributed to the noticeable improvements in some safety and quality indicators and patient satisfaction and experience". This and other cultural beliefs and traditions were expressed through participants' objections regarding some of the Magnet Recognition Program® language; and the inflexibility when it comes to recognising equivalence in the education and qualifications to those in the USA, such as accreditation and or certification levels of the nursing staff.

Many respondents repeatedly associated the revenue cycle management program with "the provision of a sustainable patient-centred care model". In particular, achieving an appropriate

length of stay was broadly seen as a significant factor potentially impacting on quality and safety. Documentation was similarly perceived as "a demonstration of quality and safety and as a validation of the care provided to patients, reflecting the type and level of care delivered".

The revenue cycle management program generated a strong response from participants when it was associated with the many recent changes impacting on their practice as well as on patient standards of service and care. Financial constraints were frequently raised as a source of frustration amongst direct-care nurses as well as the need to re-think how far St Vincent's Health Australia and the Hospital can aggressively pursue the level of financial performance expected by St Vincent's Health Australia. The need to remain financially viable, sustainable and prosperous was well accepted, understood and embraced by most of the participants.

Chapter 6

Discussion

The previous two chapters presented an empirical and interpretive description of the data highlighting the impact of the Balanced Scorecard, the Magnet Recognition Program® and revenue cycle management program on the Hospital's pursuit of an accountable and sustainable patient-centred care model.

This chapter elucidates the meaning of these findings, including a discussion of the key issues that have emerged from the cost-benefit analysis, interviews and focus groups. These findings are examined against contemporary available evidence in the literature.

It is important to note that this 10-year longitudinal study (2005–15) overlaps with the global financial crisis of 2007–09, which imposed additional financial pressures on healthcare systems worldwide. This crisis affected consumers' economic purchasing power and, by implication, it weakened their capacity to access, at times, essential and frequently non-essential (elective procedures such as knee and hip replacements, colonoscopies) healthcare services (Gold, Englander, & Seligman, 2008). In the US, Gold et al. (2008) argued that this economic crisis had adversely impacted hospitals, medical equipment and managed healthcare companies. In Australia, like other countries, thousands lost their jobs (Kearney, 2009). Stuckler, Basu, Suhrcke, Coutts, and McKee's (2009) study of the impact of the economic crisis on unemployment and its effects on population health showed that for every 1% increase in unemployment, there was a 0.79% rise in suicides of people under 65 years of age. It also created other adverse health outcomes for society.

Given the commitment to universal healthcare coverage for all Australians (with pre-payment and pooling of resources), the impact of the global financial crisis on health care was not as

pronounced as in other countries with user-pay (incurring out-of-pocket expenses at the point of service) healthcare systems. The impact of the global financial crisis on hospitals is difficult to quantify, as there were many confounding factors that may have played a role, including but not limited to, competition, price, and changes in private health participation rates during that time. Therefore, this study analysing the impact of these three performance improvement frameworks (on the overall performance of St Vincent's Private Hospital) needs to be seen in the context that the 2007–09 global financial crisis may have somewhat impacted on the Hospital's overall performance.

The three frameworks were introduced with the aim of improving clinical practice, culture, efficiencies and financial performance of the Hospital.

From the cost analysis as well as the benefit analysis detailed previously, it appears that the Hospital may have benefited from the adoption of these frameworks (individually and in combination) as follows:

The Balanced Scorecard impacted on the set objectives by aligning the chosen strategy, objectives, indicators, as well as enhancing accountability and focusing on improving performance throughout the Hospital. The Hospital was hoping to strengthen patient and staff safety by improving on the set of nurse-sensitive indicators and achieved a 26.39% improvement in HAPU; an 18.18% decrease in patient falls; and a 41.5% improvement in LTIR. In terms of efficiencies and financial performance, the Balanced Scorecard was associated with a 68.3% reduction in vacancy rate; a 20.7% reduction in turnover rate; a 31.7% reduction in agency utilisation; a 2.4% reduction in WHPPD; a 4.3% decrease in length of stay; a 20.7% increase in RPBD; and an 8.5% increase in EBITDAR. In reference to patient and staff experience, the Balanced Scorecard was associated with a 1.4% increase in patient satisfaction and a 33.3% improvement in staff engagement.

The Magnet Recognition Program® impacted on the overall performance of the Hospital by providing a rigorous evidence-based framework to enable further improvements in quality and safety as well as the practice environment in order to achieve greater staff engagement and patient experience. With the Magnet Recognition Program®, the Hospital showed a 37.74% improvement in HAPU; an 11.11% reduction in patient falls; and a 94.3% improvement in LTIR. In terms of efficiencies and financial performance, the Magnet Recognition Program® was associated with a 100% reduction in vacancy rate; a 58.5% reduction in turnover rate; a 50.4% reduction in agency utilisation; a 1.7% reduction in WHPPD; a 2.3% reduction in length of stay; a 44.1% increase in RPBD; and an 8.5% increase in EBITDAR. In reference to patient satisfaction and staff experience, the Magnet Recognition Program® was associated with an increase in patient satisfaction from 88.3% to 90.4% and an improvement in staff engagement from 60% to 67%.

The revenue cycle management program impacted on the set of indicators by developing and implementing a targeted focus on enhancing documentation, coding, length of stay and revenue optimisation. Following the introduction of this program, the length of stay fell 4.3%; there was a 4.2% increase in RPBD; and a 19.3% increase in EBITDAR.

The combined impact of the three improvement frameworks demonstrated a 38.7% improvement in HAPU; a 22.6% reduction in patient falls; and a 66.5% improvement in LTIR. In terms of efficiencies and financial performance, it indicated an 82.8% reduction in vacancy rate; a 41.7% reduction in turnover rate; a 47.5% reduction in agency utilisation; a 2.9% reduction in WHPPD; a 6% reduction in length of stay; a 34.3% increase in RPBD; and a 35.7% increase in EBITDAR.

As the majority of the savings related to an enhanced practice environment and labour management efficiencies impacting on vacancies and turnover rates, it is important to note that

a comparative study on nurse turnover rates across countries conducted by Duffield, Roche, Homer, Buchan, and Dimitrelis (2014), showed that turnover rates varied from 15.1% in Australia; 19.9% in Canada; 26.8% in the USA; and 44.3% in New Zealand. St Vincent's Private Hospital Sydney reduced its turnover rate from an average of 17.4% in 2004 to 3.9% in 2015. Nurse retention, through improving the practice environment, has been the major strategy responsible for this result.

In reference to patient satisfaction and staff experience, the implementation of these frameworks was associated with an increase in patient satisfaction from 87% to 89.2% and an improvement in staff engagement from 45% to 62.8%.

The combined impact of these frameworks are in the order of $2.5–4.1 million per annum (2007–15 discounted flows), with a return on investment of 16.2. The return on investment increased when higher negative or positive changes to the costs and benefits base rates were applied. The reason for this stemmed from the significantly higher proportion and value of the benefits compared to the costs incurred in adopting these frameworks.

The internal rate of return of introducing the Balanced Scorecard, Magnet Recognition Program® and the revenue cycle management program, projected over 10 years (2005–15) with a discount rate of 5%, yielded a net present value of $28.2 million, an internal rate of return of 585% and a benefit cost ratio of 31.9.

When the model was tested for sensitivity over time, it showed as expected, an increase in net present value when a negative discount rate was applied. The bigger the negative discount rate applied the higher the net present value. Further increases in net present value were generated when increases in both negative and positive costs and benefits were also applied as part of the sensitivity analysis.

Conversely, when positive discount rates were introduced to the model, the lower the net present value became. Similarly, the higher the positive discount rate the lower the net present value, and additional increases in net present values were generated when increases in both negative and positive costs and benefits were applied. At SVPHS, the costs associated with the implementation of these frameworks were moderate. Additionally, a growing body of research shows that Magnet-designated facilities gain many other benefits in the areas of human resources management such as reduced vacancy and turnover rates, enhanced productivity, greater efficiencies, and improved clinical outcomes, as well as improved engagement and experiences for patients, staff and doctors (Aiken et al., 2008; Aiken et al., 2000; Aiken, Sloane, et al., 1997; Kramer, 1990; Ulrich et al., 2007).

Several papers, however, reported improvements in healthcare facilities' performance, both financial and non-financial, related to the implementation of the Balanced Scorecard; (Aguilera & Walker, 2008; McDonald, 2012; Meliones, 2000; Rodgers, 2011; Shoemaker & Fischer, 2011a; Walker & Dunn, 2006). The literature also indicated that a significant number of Magnet-designated hospitals adopted a version of the Balanced Scorecard (McDonald, 2012; Meliones, 2000; Shoemaker & Fischer, 2011b) to strengthen their overall accountability and performance.

The implementation of these performance improvement frameworks suggest that the entire Hospital may have benefited through improved processes, systems, accountability and performance. Whether these improvements could have been achieved without these frameworks is questionable.

The benefits to be gained are directly related to each specific healthcare facility's starting point. Those with a weak culture and/or average clinical outcomes and patient satisfaction rates, have the greatest capacity over time to generate significant improvements.

The qualitative component of the study explored the impact of the Balanced Scorecard, Magnet Recognition Program® and the revenue cycle management program on the Hospital's pursuit of an accountable and sustainable patient-centred care model. It analysed the data gathered through semi-structured interviews and focus groups through coding, categorising and theming of the data.

The three study frameworks were reviewed by identifying their individual benefits and challenges. Subsequently, the data was subjected to a concept thematic analysis, which derived three recurrent and prevailing themes: leadership, operational excellence and quality and safety. Subsequently, the benefits and challenges were incorporated and reported within the concept thematic analysis.

There was an evident knowledge differential between senior nurse managers and direct-care nurses when it came to describing their understanding of the various frameworks. Not surprisingly, nurse managers and senior nurses had a more sophisticated understanding of the frameworks and the impact on their practice. For instance, senior nurses alluded to the main purpose of these frameworks by saying that both the Magnet Recognition Program® and the Balanced Scorecard, because of their broad focus on patient, the financial, the staff benefits and the consumer, enabled broader decision-making.

Direct-care nurses saw themselves as principally charged with the clinical care of patients and deemed the Balanced Scorecard and the revenue cycle management program as being primarily management and leadership tools. Senior nurses from both the semi-structured interviews and focus group 1 referred to the frameworks in terms of "the Balanced Scorecard and the revenue cycle management are focused on patient-centred care".

The Magnet Recognition Program® was recognised as a nursing excellence program and one more readily viewed by direct-care nurses as their own framework, assisting them in improving their practice environment and achieving better patient outcomes.

The overwhelming assessment of participants was that each of the individual frameworks was important to the Hospital. Each of them could work independently from one another; however, they saw them as all being interdependent and assisting the Hospital towards greater accountability, quality and safety, improved performance and greater sustainability. Some participants stated that "individually, the revenue cycle management program and Balanced Scorecard and Magnet all work interdependently"; "they're independent but they're interdependent as well of each other because they can't just work by themselves and have the success that we do have as an organisation. It comes down to our leadership as well"; and "individually, the three frameworks are important, but not as important as when they're all working together with the same goal, which is to look after our patients as per the Hospital's patient-centred care model.

All of these requirements were described as critical in the hospital's quest to achieve an accountable and sustainable patient-centred care model. Some participants mentioned that "all of those systems allow everyone to have a say on how we care for patients". To conclude, a few participants provided responses that captured their sentiments about the combined impact of these frameworks, including "so if we didn't have one of those frameworks, would we still be the same?"; "would we still be able to deliver the same level of patient care? Maybe not. No, because something would fall down because you wouldn't be able to afford everything"; "monitor and measure what you're doing"; and "they all work together to contribute to providing sustainable patient-centred care".

The aim of this research was to analyse the financial, clinical and cultural impact of the three frameworks implemented at St Vincent's Private Hospital, Sydney and determine the effect on the Hospital's overall performance and sustainability.

Essentially, the purpose of this chapter is to discuss the findings and its relationship to the Hospital's strategic decision for adopting these frameworks in order to execute its mission and vision. The purpose is also to evaluate whether the hospital has benefited and/or succeeded in its commitment to deliver high standards of safety and quality in its goal to develop and deliver an accountable and sustainable patient-centred care model. In what follows, I describe the Hospital response to challenge. In working on this undertaking, the Hospital developed a patient-centred care conceptual model (Figure 26) that is based on four quadrants that may impact on the patient experience; quality outcomes of care and patient experience; and organisational efficiency, productivity, sustainability and prosperity.

The first quadrant is about the organisation's leadership fostering a culture of enquiry and reflection; open to change and transformation within a practice environment that encourages the promotion and delivery of high standards of care. The second quadrant focuses on investing in human and social capital by nurturing creativity and innovation as well as commitment, competence and accountability. The third quadrant's attention is on developing strong partnerships within the multidisciplinary team of universities and other relevant medical stakeholders and, most importantly, with patients and their families. The fourth quadrant inspires exploration, development and implementation of innovative models to deliver improved patient-focused outcomes of care.

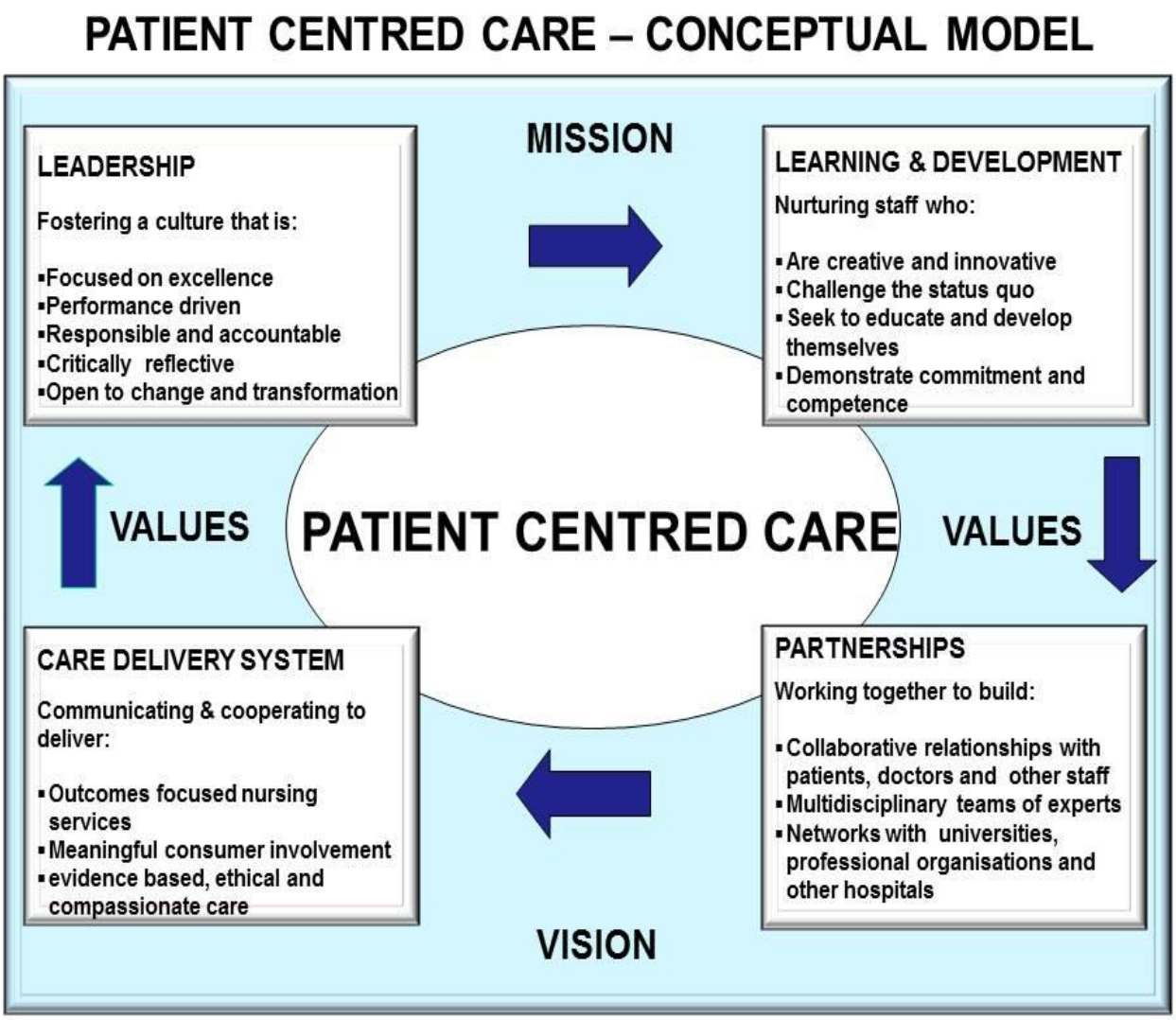

Figure 26. Patient-centred care conceptual model.

This conceptual model is based on the Donabedian (2005) structure, process and outcomes framework and serves as a professional practice model to engage and guide clinicians in pursuit of patient-centred care.

The Hospital's quest for greater accountability and sustainability in its journey towards achieving a patient-centred care model was led by its senior leaders and managers, who were supported by the leadership and management teams as well as the clinical and support staff from all areas within the organisation. This sentiment was clearly extracted from all

participants' feedback. Organisation-wide support was considered an essential requirement and was described as one of the patient-centred care implementation and ongoing sustainability challenges (Fuller et al., 2004; Lawrence & Kinn, 2012; Luxford et al., 2011). Leadership, and its ability to embrace and drive patient-centredness, was seen as pivotal by all participants and was one of the recurrent and prevailing themes throughout the interviews and focus groups. Leadership expectations were evident from participants' responses. Envisioning was seen as a first step in the process, followed by engaging all stakeholders in the patient-centred care journey, which included carers and, most importantly, the patients and their families and friends. Enabling patient-centred care was seen as being able to provide a practice environment where people (staff, patients and their loved ones) were welcomed, felt safe, valued and listened to. These attributes were pivotal towards the achievement of an improved patient-centred care model.

Leadership was entrusted with developing, adopting and/or adapting best-practice frameworks to assist the staff in meeting the strategic patient-centred care agenda. Leadership was equally expected by participants to "lead by example", empowering, energising and creating a milieu of trust and confidence in its people to deliver on the quest towards the attainment of a patient-centred care model. It was also expected by participants to honour the staff efforts towards patient-centred care in the past, acknowledging the many positive steps taken to improve today's practice and formulate an exciting innovative agenda for further enhancements in the future.

The main benefits of a patient-centred care model identified in the literature related to improvements in quality and safety, which would lead to a reduction in healthcare costs (Ellis, 1999; Olsson et al., 2009; Robinson et al., 2008). Participants raised concerns related to doctors' gaps, which resulted in patients having significant out-of-pocket expenses that would potentially impact on their future access to private health care due to affordability issues

affecting many privately insured patients. Whilst this finding of the study is beyond the scope of the research question, it is extremely relevant and should be closely followed as the subject of a further enquiry in the future. This issue has the potential to threaten the desire to provide and deliver access, affordability, accountability and sustainability within a patient-centred care model.

Patient satisfaction was reported as another advantage of this model (Finset, 2011; Fuller et al., 2004; Thórarinsdóttir & Kristjánsson, 2014). This benefit was supported by the findings of both the quantitative and qualitative components of the study. The cost-benefit analysis suggested the improvements that were made towards patient-centred care accountability and sustainability by highlighting improvements in the reduction rates of patient falls and hospital-acquired pressure ulcers, as well as improvements in patient satisfaction.

Joseph et al (2004) and Zolnierek (2014) argued that patient-centred care can be a driver for the development of innovative models of care. This was corroborated by the findings of this research related to the efforts undertaken by the Hospital in establishing innovative services including but not limited to a same-day centre, youth mental health services, acute stroke service, home care through an interdisciplinary extended care program, and many of the others previously mentioned. These services have assisted the Hospital and, more importantly, the patients in obtaining a more comprehensive range of desirable healthcare services.

However, patient-centred care is not without its controversy (Delbanco, 1995, p. 634). Many health professionals are turned off by the persistent criticism regarding the reported lack of patient-focused care (Ellis, 1999, Robinson et al. 2008, and Olsson et al. 2009).

Cultural beliefs were evident from participants who strongly argued that patient-centred care had always been a committed practice delivered by nurses and other clinicians at the Hospital. This point was supported by the findings of the cost-benefit analysis in terms of quality and

safety outcomes over the period 2005–15. The qualitative data also validated this by showing high staff engagement and culture and pleasing patient satisfaction and experience results. These results were benchmarked nationally, and later internationally, through the Hospital Consumer Assessment of Healthcare Providers and Systems **(**HCAHPS) survey.

The lack of a clear patient-centred care definition and method of measurement described by Robinson et al (2008) and Pelzang (2010) was brought up by participants expressing the same dilemma. The McCormack and McCance (2006) person-centred care framework; the Joseph et al. (2011) whole-person care (WPC) model; and the Zolnierk (2014) "knowing the patient" concept all contribute to a richer discussion of what does or may constitute patient-centredness. Notwithstanding this, its acknowledged academic contribution to the relevant subject in question, nevertheless creates, as reported by participants, a "foggy area" that needs to be better defined and appropriately measured and reported. It was expected that leaders would need to take charge of this task and develop a clearer definition, together with a reasonable measuring structure.

In order to address this matter, the Hospital adopted the mantra "patients first" – patient-centred care is first and foremost about safety, followed closely by quality and culminating in the level of patient experience achieved. The Hospital's commitment to deliver "excellence in compassionate care" is another aspirational catchphrase that it is frequently used within the facility. Given these commitments, safety and quality indicators such as patient fall rates, pressure ulcer rates, the incidence of medication adverse events, infection rates, sentinel events and others, form the basis of ascertaining and addressing the safety and quality imperative. Patient satisfaction and experience are continually assessed and feedback is acted upon with the intention of maintaining the Hospital's reputation as a quality and safe healthcare provider that has an increased community of loyal patients.

The lack of interdisciplinary teamwork illustrated by Ellis, (1999); Fuller et al. (2004); McCormack et al. (2010); and Kitson et al. (2013) was another challenge in delivering patient-centred care. The cost-effectiveness of patient-centred care was seen both as a driver to achieve improved clinical outcomes at a reduced cost (Stone, 2008) and as a potential barrier for its successful implementation.

The findings from the interviews and focus groups alluded to this issue. The provision of case conferences and interdisciplinary care for patients, particularly in the private sector is often unaffordable resulting in additional costs that are either absorbed by healthcare facilities or passed onto patients.

The focus of this research was essentially to evaluate the Hospital's success or otherwise in its journey towards delivering a patient-centred care model, supported by the implementation of the three frameworks in question. The impact of each of the individual frameworks is discussed next, in line with the outcome of a patient-centred care model, and concludes with an overall discussion of the combined impact of these three frameworks on the Hospital's vision.

Impact of the Balanced Scorecard at SVPHS

Attributing causality of improved clinical outcomes to the implementation of the Balanced Scorecard is not possible unless an experimental study design is used. Whilst this framework creates an opportunity for focusing on improving clinical outcomes (through setting objectives, measures, targets, initiatives and accountability), causality, is difficult to demonstrate and at best an association or relationship between the outcome and the intervention can be demonstrated.

According to Rodgers (2011), the primary purpose of implementing a Balanced Scorecard in health care is to ensure long-term adaptation and survival. A noble mission doesn't guarantee financial solvency (Meliones, 2000). These authors, along with Shoemaker and Fisher (2011a), argue that the Balanced Scorecard may lead to a reduction in healthcare costs. A study conducted by Inamdar and Kaplan (2002) found improved financial and customer satisfaction in healthcare organisations that had adopted the Balanced Scorecard. Hoque (2014) reviewed 20 years of studies on the Balanced Scorecard and claims that organisations need to focus on the Balanced Scorecard meeting customers' tastes and preferences. Similar to these results, the research findings of implementing the Balanced Scorecard at the Hospital suggest measurable performance improvements in financial outcomes and customer satisfaction. The research findings demonstrate, both empirically and descriptively, that the implementation of the Balanced Scorecard within the Nursing Directorate may have been one of the most significant achievements of the Hospital in the last decade, which led to its improved performance.

The quantitative findings of this research coupled with the data from the interviews and focus groups indicated that the Balanced Scorecard had been adopted by the Nursing Directorate who considered it their accountability and performance improvement tool. The Balanced Scorecard was found to be widely used for both operational and strategic matters throughout the clinical units and nursing departments.

Participants wholeheartedly agreed with the view that the Balanced Scorecard was their framework to look at the organisation from a balanced perspective and that it was the most shared tool across the Hospital. Participants referred to the Balanced Scorecard as being essential to the delivery of patient-centred care, with its emphasis on patient quality and safety and experiential imperatives.

The Balanced Scorecard is considered a most valuable tool for healthcare executives (Inandar and Kaplan 2002). Walker and Dunn (2006) concur with this proposition, stating that the Balanced Scorecard improves hospital performance and productivity. This research suggests that the success of the Balanced Scorecard at the Hospital may lie in the fact that it was introduced by nurses for nursing, with the aim of strengthening accountability, performance and continuous improvement in patient-centred outcomes.

According to Chan (2006), despite the potential benefits of the Balanced Scorecard, there are significant challenges in implementing it. Clearly this framework is perceived by direct-care nurses as being the domain of leadership and management. The knowledge differential between managers and clinicians was tangible. However, the Balanced Scorecard was perceived by most participants as a "seamless enabler" of patient-centred care by focusing the organisation on improving accountability and performance.

Zelman et al, (2003) stated that as "with any innovation, the implementation of the Balanced Scorecard would be expected to go through a product life cycle of introduction, growth, maturity and decline" (p.1). Participants highlighted the need to conduct regular Balanced Scorecard "back to basics" to ensure its continual renewal and this finding concurs with those shown by Shoemaker and Fisher (2011a).

Leadership, operational excellence and quality and safety were the three most pervasive themes related to the Balanced Scorecard in feedback provided by participants. These themes are key drivers of a successful implementation of the Balanced Scorecard in health care and enhanced performance is suggested to be a by-product of the Balanced Scorecard that focuses on developing a set of lead and lag indicators for all various strategic objectives within the strategy map (Kaplan and Norton 2006).

The Hospital's development of enhanced structures, process and outcome measures for each of its objectives within the Balanced Scorecard suggests that it may have paid dividends in achieving improvements in performance within the four perspectives of the Balanced Scorecard framework. Prior to its introduction, the Hospital's performance was considered a good one, however, most participants agreed that without the current stronger process and systems, greater governance, accountability and performance targets, it would have been less likely that the Hospital would have achieved the level of performance that it did in 2015. The benefits achieved through this framework would seem to have overcome the challenges and implementation barriers that were initially encountered.

From the introduction of the Balanced Scorecard in 2005 until commencement of the journey towards Magnet recognition in 2010, the Hospital experienced a remarkable period of growth and improvement. The cost-benefit analysis related to the introduction of the Balanced Scorecard indicated an estimated net annual savings of $2,703,127 per year, with a projected return on investment of $41.10 for every dollar invested. The major savings seem to have originated from improved accountability and performance in labour management, which was related to a decrease in vacancy rates, turnover rates, overtime, agency utilisation and gains in efficiency through reducing the work hours per patient days (a standardised measure of a hospital's efficiency). The internal rate of return of introducing the Balanced Scorecard, projected over 10 years with a discount rate of 5%, yielded a net present value of $20.7 million; a discount flow net benefit of $2.5 million to $2.1 million for the years 2007 to 2015; an IRR of 585%; and a benefit-cost ratio of 125. Moreover, these outcomes were achieved through a modest financial investment.

A couple of participants raised the question of whether the Hospital would have been able to achieve this level of performance without the Balanced Scorecard. Most of the other participants responded by saying "Without the Balanced Scorecard, you couldn't. Your results

would not be as successful". Most of the literature on the subject suggests that organisations without an accountability and performance improvement framework are unlikely to achieve their potential (Inamdar & Kaplan, 2002; Zelman et al., 2003) and this research concurs with this assessment.

Without the improved measuring, reporting and increased accountability that the Balanced Scorecard provided, the Hospital may not have been able to improve as much as it did. The question, however, remains unanswered as to whether or not the Hospital could have achieved this level of performance without the Balanced Scorecard. Had the Hospital introduced another performance improvement system, such as Lean or Six Sigma, there could only be speculation as to what the outcomes might have been.

The findings of this research suggest that the Balanced Scorecard may have contributed and played a significant role in assisting the Hospital with its quality and safety improvement agenda and improving accountability, efficiency and overall performance. The Balanced Scorecard may not necessarily guide organisations in their decision-making regarding what the right strategy might be, and certainly other clinical excellence frameworks are necessary to focus on continuous improvement. However, the improved performance achieved with the Balanced Scorecard encouraged the Hospital to implement the Magnet Recognition Program® in its desire to strive for greater and sustained levels of accountability and performance.

Impact of the Magnet Recognition Program® at SVPHS

Key structures, process and outcomes must be present in organisations prior to considering embarking on the Magnet journey (Kuhar et al., 2004). The Hospital started considering the Magnet recognition journey as early as 1996. The Hospital, as previously mentioned, did not at

that time meet the eligibility requirements in terms of the program's expected qualifications, and it was neither prepared nor ready to undertake the journey.

The adoption and implementation of the Balanced Scorecard framework in 2005 was a crucial step towards this journey. Equally, and as mentioned by participants, the desire to excel in the Australian Council on Healthcare Standards accreditation program was seen as a further pre-requisite. Prior to the decision to commence the journey, the Hospital had confidence and a strong belief that the Hospital at that time was already a "Magnet like" facility and worthy of taking on the challenge towards recognition.

Leadership, once again, was seen by participants as pivotal in deciding, motivating and inspiring the Nursing Directorate to buy into the Magnet journey that was not without its critics and sceptics. Wolf et al. (2014a), in examining in their study the developmental levels necessary to achieve Magnet designation, found that healthcare systems require transformation, and leadership was crucial in making this a reality. The Hospital nursing leaders embraced the Magnet Recognition Program® as a nursing and hospital-wide strategic framework to achieve an improved practice environment and improved patient outcomes. This began a new transformative chapter in the history of the Hospital that was worthy of a thorough review and evaluation. This was seen as a further expression of the leadership's commitment to assessing the impact that Magnet had had on the practice environment, patient satisfaction and experience and outcomes of care.

The findings of this research suggest that the Magnet Recognition Program® may have assisted the Hospital to improve quality and safety and patient satisfaction. The cost-benefit analysis validated and confirmed the considerable improvements in patient fall rates, pressure ulcer rates and levels of patient satisfaction experience. These findings, confirmed by the many studies conducted over the past 12 years, for example, Kuhar et al. (2004); Russell (2010); K. Drenkard

(2010a); and Marlene Kramer et al. (2011), support the proposition that the Magnet Recognition Program® has been a key factor in improving quality and safety at the Hospital.

This research shows an improvement in patient satisfaction since the journey to attain Magnet recognition began. Most recently, the Hospital has been utilising the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAPS) survey and through benchmarking, both nationally and internationally, achieved net promoter scores (NPS – a measure of customer/patient loyalty to the organisation) as high as 84.8. This finding concurred with Chen et al. (2014), who found a significant link between Magnet hospitals and higher HCAPS scores. It also coincided with Smith's (2014) findings that suggest that Magnet hospitals have significantly higher scores in patients' satisfaction with care.

Another key finding of this research is that the Magnet Recognition Program® may have strengthened the practice environment at the Hospital. This fact alone could be considered a major benefit of the program (Russell 2010; Kramer et al. 2011). Whilst a culture of "success" was achieved at the Hospital in 2007, the percentage of engaged staff has increased over the years. More encouraging is the fact that the percentage of staff that believe the Hospital is a "truly great place to work" rose from 50 to 77% in the years 2005 to 2013.

The practice environment, since the decision to embark on the Magnet Recognition Program®, has blossomed, and is reflected by the higher engagement percentage amongst the staff, their collegiality and their "can do attitude". A new shared governance structure consisting of six practice councils was established, which provided greater autonomy in decision-making and was seen by participants as a major source of empowerment for direct-care nurses. Pinkerton (2005), when examining the financial return on Magnet recognition, argued that "creating a Magnet culture is an investment in the staff and the future, which creates a positive impact on

the organisation's bottom line" (p.52). Lundmark (2014) also found that positive and supportive nursing practice environments were critical to providing patient quality and safety.

To further improve the nursing practice environment, practice development and research was strengthened, which created unparalleled opportunities for nurses to pursue. Many innovative projects were planned and delivered as a result of this investment. Since 2011, more than 80 registered nurses have completed their tertiary studies and graduated with graduate certificates, graduate diplomas and masters. This upsurge in staff willingness to pursue further professional development and education has been enabled through the successful negotiation of fully funded scholarships with a partner university, which has amounted to $671,322 over 5 years.

Aiken et al. (2008) have undertaken extensive research of practice environments over the past 25 years and have shown that nursing practice environments are positively impacted by the implementation of Magnet principles. The Hospital established its first Chair of Nursing in Applied Research in 2007. The principal driver of this was the strong desire to improve patient outcomes by enhancing multidisciplinary, nursing-led research. This initiative was undertaken through a con-joint arrangement with a partner university. Today, the Hospital has a record of providing assistance to early-career researchers and creating a preliminary honours program for clinical nurses interested in pursuing research activities. Most notably it commenced a higher degree by research program, which in 2015 had nine confirmed candidates undertaking a professional doctorate (Doctorate of Health) and five undertaking PhDs. In 2016, another nursing candidate of the professional doctorate commenced the program. McHugh et al. (2013) examined mortality rate in hospitals and found that Magnet hospitals have lower mortality and failure to rescue rates than non-Magnet organisations. These authors found that the Magnet hospitals' better outcomes could be attributed to highly educated nurses and supportive nursing professional practice environments. In terms of highly educated nursing staff, as a Magnet Hospital in 2016, 86% of SVPHS's nurses had tertiary qualifications and this percentage was

growing at a faster rate than peer hospitals in the industry. In fact, all new graduate nurses undertaking the new graduate transitional support program are required to complete a transitional honours program with a partner university, further facilitating a career path to improve qualifications that will lead to improved patient outcomes of care. This initiative demonstrates the Hospital's leadership ambition to ensure that the Magnet principles are lived and practised to inspire the Hospital to achieve the evidence-based findings of the research on Magnet hospitals over the last 30 years.

This research found that the Magnet Recognition Program® is not immune to challenges, criticism nor scepticism. Some participants were critical of "the language used" and the insistence on "adherence to a rather inflexible framework", as well as the pressing need to internationalise it in order for it to be made more attractive for diverse healthcare systems around the world, who were all pursuing safe care and improved quality at a cheaper cost and with more satisfied patients. Joyce and Crookes (2007) found similar responses in their study, in particular around the language used, the contextual meaning and presentation of a tool in measuring "Magnetism" in Australian healthcare environments.

The practice environment scale (PES-AUS), the Australian adapted tool (Middleton. et al 2008), had been used at the Hospital in 2009, 2012 and 2014. For the purpose of facilitating the above issues related to language, presentation and meaning, it was referred to at the Hospital as the Magnet survey. The results of these surveys demonstrated the level of engagement of nurses that reflected on the healthy practice environment that existed at the hospital (Appendix G, p. 295). An unquestionable finding of this research supports Peter Drucker's (n.d.) notion that "culture eats strategy for breakfast". Since the introduction of the Magnet Recognition Program®, the culture of the Hospital has remained in "success", striving for greater levels of accountability, inclusiveness, inquisitiveness, engagement and adaptability. Participants in this

study noted that attempts to quantify culture in monetary terms would be “like measuring the immeasurable”; “pricing the priceless” and “valuing the invaluable”.

Drenkard (2010a) argued that a competent, productive, efficient and effective nursing service can deliver reduced costs and better healthcare outcomes. On the other hand, Armstrong (2005) in exploring the Magnet concept in Australia claimed that the resources required to achieve Magnet recognition are significant and suggested that organisations could adopt the Magnet principles without undertaking the journey and costs associated with it.

The findings of this research contest that assertion and indicate that the Magnet implementation costs at the Hospital, and on average in other Magnet hospitals, have been modest (Drenkard, 2010; Higdon et al., 2013; Jayawardhana et al., 2014), compared to the strong return on investment derived from the several positive outcomes achieved. I argue that an attempt to adopt Magnet principles without undertaking the journey may not be necessarily a wise proposition. It would certainly not be a serious and accountable attempt to submit an organisation to a rigorous process of scrutiny and ultimately recognition, both nationally and internationally. Often organisations claim implementation costs as a pretext for not undertaking the Magnet journey. On the other hand, there may be other reasons such as fear of failure, not willing to commit and regarding Magnet as being too hard to implement.

In assessing the impact of the Magnet Recognition Program® as it relates to the main question of this research, the Hospital’s practice environment had delivered considerable gains and benefits with a positive impact on the organisation as a whole. Improvements in nursing turnover alone could be seen as a major benefit of the Magnet journey (Russell (2010). The Hospital has not had a registered nurse vacancy since February 2010. A finding of this research indicated that the vacancy and turnover rates dropped in 2009 when the hospital officially applied for and began the Magnet Recognition Program® journey. Equally, the reliance on

nursing agency substitution decreased significantly with quality and safety and financial gains for the Hospital.

Improving quality and safety as well as reducing costs generates a strong value proposition for healthcare organisations (Drenkard, 2010a; Jayawardhana et al., 2014; Lundmark, 2014). The cost-benefit analysis, in relation to the implementation of the Magnet Recognition Program®, indicated an estimated net annual savings of $1,900,811 per year with an estimated return on investment of $13 for every dollar invested. Major savings were derived from further improvements in accountability and performance in labour management, which were related to additional reductions in vacancies, overtime, agency utilisation, turnover rate and efficiency and resulted in lower work hours per patient days. These finding are similar to many high-quality Magnet hospitals in the USA, corroborated by those that have undertaken a cost-benefit analysis and those that have developed a business case for Magnet (Drenkard, 2010; Haley, 2004).

The internal rate of return of introducing the Magnet Recognition Program®, projected to 2015 with a discount rate of 5%, yielded a net present value (NPV) of $8.4 million; a discount flow net benefit of $1.7 million to $1.6 million for the years 2011 to 2015; an IRR of 498%; and a benefit-cost ratio of 27. Again, the question was asked whether the Hospital would have been able to deliver these outcomes without having implemented the Magnet Recognition Program®. The findings of this research suggest that organisations cannot afford not to, at least, consider undertaking the Magnet Recognition Program® journey. Incidentally, the Balanced Scorecard and the Magnet Recognition Program® are being considered by other facilities, including but not limited to St Vincent's Health Australia and beyond, as frameworks to enhance quality and safety and improve overall organisational performance.

What seems clear to me is that an excellence framework was required to continually drive healthcare improvements at the Hospital. Could this have been achieved through another framework such as Studer, Baldrige, Lean thinking or Six Sigma? It is up to the leadership of the organisation to decide which one to adopt and implement to achieve their set agenda. Having said that, Magnet is a commitment to excellence in the delivery of patient care services; its focus is not necessarily on reimbursement and healthcare affordability (Jenkins and Jarrett-Pulliam 2012). While the focus on maintaining quality and safety of care is paramount, there is equally an imperative for Magnet organisations to become more focused on productivity, efficiency, access, affordability and long-term sustainability. These additional challenges are what prompted the Hospital to develop and implement its own customised brand of a nursing-led revenue cycle management program.

Impact of the revenue cycle management program at SVPHS

Having implemented both the Balanced Scorecard and Magnet Recognition Program®, there was still a need to continually improve, particularly in relation to the financial ongoing sustainability of the organisation. The Hospital's ageing infrastructure required attention and the expansion of its services to accommodate an increasing patient demand as well as new alternative and innovative models of care. To fund this growth agenda required the Hospital to deliver a financial performance able to withstand the debt-financing arrangements required. Funding the Hospital redevelopment became a pressing imperative, and hence the importance of developing and implementing a revenue cycle management program to address this challenge.

To improve the Hospital business model further, through focusing on enhancing accountability and sustainability, a revenue cycle management conceptual model (depicted in Figure 27), was

developed and incorporates three key areas related to patient care and revenue generation that is prevalent in the revenue cycle management literature (Degen, 2010; Edwards, Silow-Carroll, & Lashbrook, 2011; Mallipeddi, 2010; Mathur & Lorusso, 2012).

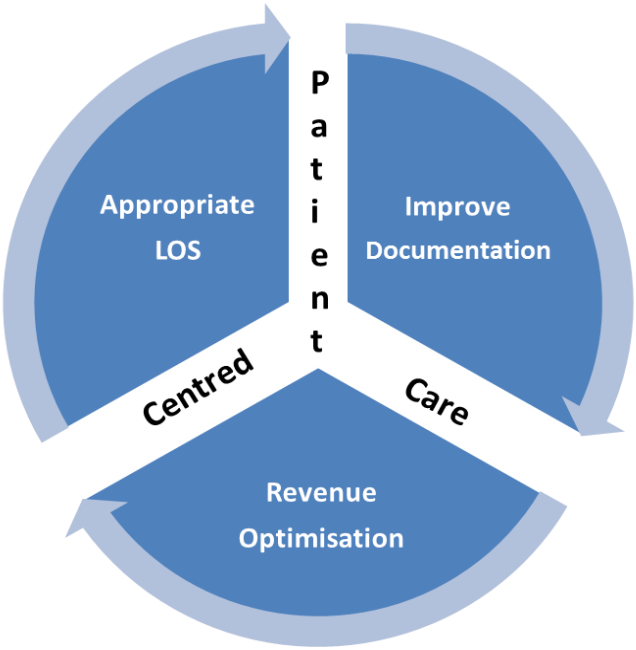

Figure 27. Revenue cycle management – conceptual model

First, an appropriate length of stay is vital to improving access, sustainability and achieving high standards of quality and safety. Second, improved documentation of the inpatient episode of care will result in an accurate coding of the medical record; and third, by optimising the revenue through a skilled and reasonable price structure negotiation within the health fund contracts, and by realising a healthy revenue per bed day by capturing all the consumables, as well as medical and surgical supplies utilised during the inpatient episode of care.

Rauscher Singh and Wheeler (2012) contested that an effective revenue cycle management program is critical in a hospital's effort to improve its financial performance. Organisations need to upgrade their revenue cycle management to remain financially viable today and into the future. Mathur and Lorusso (2012) claimed that a revenue cycle management program is a

critical component of an accountability model, which had been the objective of the Hospital through the prior introduction of the Balanced Scorecard and Magnet Recognition Program® frameworks. These authors also indicated that there is a fundamental challenge to improve quality and safety and deliver this at a lower cost.

The findings of this research showed that since the introduction of the revenue cycle management program, the Hospital has achieved a 4.3% reduction in its average length of stay; a 4.2% increase in revenue per bed day; and a 19.3 % increase in earnings before interest, tax, depreciation, amortisation and rent.

As part of these results, patients' experience of the quality and safety of their care had also improved as discussed previously. Degen (2010), however, raised the concern that healthcare providers are so focused on patient care that the "health" of the business is often neglected. Edwards et al. (2011) argued that by improving quality and access, efficiency will improve. These authors proposed standardisation and process simplification as a means to eliminate waste and redundancies.

The Hospital's revenue cycle management program therefore focused on achieving an appropriate average length of stay, improved documentation and coding, as well as optimising the revenue that the Hospital was entitled to receive.

Leadership, again, was seen by participants as having to act on the challenge to raise the financial performance of the organisation by focusing on areas where there was significant scope for improvement. According to the Healthcare Financial Management Association (2014), its 25 tips for revenue cycle success noted that revenue cycle management is difficult for even the most driven organisations.

Direct-care nurses expressed their misgivings and concerns, as well as making it perfectly clear that their roles were "to focus on delivering high standards of patient care quality and safety,

rather than focusing on financial imperatives". Despite these sentiments, participants saw the necessity of the revenue cycle management program and clearly linked it to the Hospital's ability to increase its efficiencies, productivity and financial sustainability.

Current healthcare spending is clearly seen as unsustainable around the world, and there is a trend away from a "fee for service" model to a "values-based" payment model where outcomes of care are paramount (Terrell 2013). This is when the Hospital's strategy of adopting the three frameworks all came together, with the desire to achieve higher levels of accountability, safety and quality and improved patient experience outcomes within an integrated and sustainable patient-centred care framework.

Combined impact of the three frameworks at SVPHS

As discussed previously, the findings of this research showed various degrees and levels of understanding and ownership of these frameworks. This variation related to participants' roles, knowledge and understanding of them. Most nurse managers were aware and familiar with the three of them, and in particular the Balanced Scorecard and the Magnet Recognition Program®. It was not surprising to find that the revenue cycle management program was the least known, given its relatively recent development and implementation. When it came to direct-care nurses, their knowledge of the Balanced Scorecard was expressed as it being a tool for measuring, accountability and performance, and not necessarily as an organisational strategic management system. The findings distinctly indicated that their understanding and ownership of the Magnet Recognition Program® was clearly the most well-known of the three and seen as a nursing excellence tool.

The revenue cycle management program was the least known of the three, but interestingly participants growing understanding of financial constraints, being prevalent in the media on

almost a daily basis, triggered a change in their thinking and they realised there was a need to achieve greater efficiencies, productivity and improved financial performance.

As discussed earlier in the literature review, there are several studies examining the impact of the Balanced Scorecard, the Magnet Recognition Program® and revenue cycle management in healthcare facilities. Only one study examined both the impact of the Magnet Recognition Program® and revenue cycle management as it related to Magnet facilities striving to become accountable healthcare organisations (ACOs) (Jenkins & Jarrett-Pulliam, 2012). Given that there are no known published studies or literature on the combined impact of these three frameworks, it was not possible to discuss the findings of this research in line with available relevant material. The findings of this research suggest that the overall impact of these frameworks on leadership, operational excellence and quality and safety are encouraging.

The combined impact of these frameworks may have generated improvements in quality and safety, demonstrated by a reduction in patient falls, pressure ulcers; nursing staff lost-time injury frequency rates and needlestick injuries. The practice environment gains, reflected in a more engaged culture within the organisation, indicated improvements in eliminating vacancies, reducing turnover rates as well as increasing efficiency by reducing the nursing work hours per patient day. There was a noticeable reduction in average length of stay, coupled with improvements in revenue per bed days and the profitability margin of the Hospital.

In financial terms, the cost-benefit analysis in relation to the implementation of the Balanced Scorecard the Magnet, the Recognition Program® and the revenue cycle management program indicated an estimated net annual savings of $5,129,646 per year with an estimated return on investment of $16.2 for every dollar invested. The internal rate of return of introducing the Balanced Scorecard, Magnet Recognition Program® and the revenue cycle management

program, projected over 10 years (2005–15) with a discount rate of 5%, suggests a net present value of $28.2 million, an internal rate of return of 585%; and a benefit-cost ratio of 31.9.

The cost-benefit analysis indicated that the Hospital's overall performance may have significantly improved, and that it continues to benefit as a result of the adoption of these frameworks, which concurs with the findings related to the Balanced Scorecard by Meliones (2000), Inamdar and Kaplan (2002) and Shoemaker and Fisher (2011a). The findings of this research also align with the views of Russell (2010), Drenkard (2010a), Jayawardhana et al. (2014) and Lundmark (2014) as they relate to the improvement in healthcare costs by the adoption of the Magnet Recognition Program®. These findings also reflect similar conclusions reached in the studies of Mallipeddi (2010), Degen (2010), Rauscher Singh and Wheeler (2012), Mathur and Lorusso (2012), Terrell (2013), Colpas (2013) and the Healthcare Financial Management Association (2014) that a successful revenue cycle management program may reduce healthcare costs and improve the organisation's financial performance. The overall findings of this research also concur with the conclusions of Robinson et al. (2008) and Olsson et al. (2009) that a patient-centred care model can lead to reductions in healthcare costs whilst improving quality and safety. This finding is similar to that reached by the many high-quality Magnet hospitals in the USA, as well as those that have undertaken a cost-benefit analysis to develop a business case for Magnet (Haley, 2004; Higdon et al., 2013).

In addition to the suggested positive financial outcomes that were derived from the combined implementation of these frameworks, there was very constructive participant feedback on the programs as well. Many described the three individual frameworks' characteristics and regarded them as working well independently in addressing their individual areas of focus. However, nearly all participants noted that "the three frameworks were interdependent and, in unison, their impact was formidable". This finding suggests a positive association between the

two components of the research study, in terms of the individual and combined benefits of the three frameworks assessed.

A finding of the qualitative component of the study suggests that more needs to be done by the nursing leadership in regularly and consistently communicating the purpose of these frameworks and their impact on the organisation as a whole. There is a need and a challenge to simplify and make sense of the vital importance of these frameworks to assist direct-care nurses in their understanding and acceptance of them. Previous attempts have been made to articulate these points to all staff, direct-care nurses in particular, and how these frameworks in unison may optimise performance in working towards achieving improved patient outcomes, and remaining financially viable, sustainable and prosperous in growing the healing ministry – the "mission".

Based on Donabedian's (1980) structures, process and outcomes framework, a jigsaw puzzle named "how it all fits together" was developed by the Hospital in 2011 in order to explain and convey the benefits of moving towards an accountable and sustainable patient-centred care model. This model was developed using Jigsaw 3 puzzle software and is represented in Figure 28 below. The principal aim of this model was to integrate these frameworks in an all-encompassing model to facilitate its understanding, support and continual renewal (Shoemaker and Fisher, 2011a; Zelman et al., 2003; Trotta et al., 2013).

Figure 28. How it all fits together – Jigsaw Puzzle 3

The measure of success of the "how it all fits together" model is in assisting with the knowledge and understanding of the combined impact of these frameworks on the performance of the Hospital. Some participants alluded to this model and its benefits in relation to improving performance, but indicated that it needs to be further promoted on a consistent and regular basis. Other participants obviously were not familiar with it, which attested to the need for further distribution of the model through the Hospital.

This "how it all fits together" model may assist in explaining why the organisation exists in terms of its mission, vision and values. It specifies the structures, both physical and human, that are at the Hospital's disposal, as well as the frameworks that are available to the staff to drive and execute the strategic vision in order to achieve the set targets and outcomes. This

educational puzzle has been used in the orientation of new staff and in the ongoing attempt to hardwire the understanding of a model that strives towards transformational leadership, structural empowerment, and exemplary professional practice, as well as new knowledge, innovation and improvements. All of these objectives are in line with the main three themes identified throughout the thematic analysis: leadership, operational excellence and continuing improvements in quality and safety.

Participants mentioned that "the success of the Hospital lies in the commitment of its leadership, which is constantly searching for better ways to improve". Another factor mentioned by respondents as a major contributor was "the longevity, consistency and stability of its leaders to enable the building and developing of a culture with a can-do attitude". Surprisingly, not all nursing services, in both the public and private healthcare sectors, have nursing strategic plans, unlike St Vincent's Private Hospital; nor do they utilise the Balanced Scorecard or the Magnet Recognition Program® as key frameworks to drive accountability, performance and patient centred outcomes.

The other significant insight from participants was that "the three frameworks examined have been led by nurses for nursing and ultimately for improving patient-centred outcomes".

As a result of these findings I have developed an organisational integrated patient-centred care conceptual framework based on our evaluation of the impact of these frameworks at the Hospital. This conceptual framework was developed in the hope that not only our Hospital but other similar healthcare facilities may benefit from considering and, better still, adopting these frameworks in their own pursuit of greater accountability, financial performance and improved patient-centred care outcomes.

Integrated patient-centred care conceptual framework

The conceptual framework originated from attempts to convey meaning to direct-care nurses and other staff around the Hospital about the merit of these frameworks in isolation but more importantly in working together. The findings of this research suggest that there is now some evidence to support the benefits of combining these three frameworks to work in unison to deliver a patient-centred care model. I therefore propose that the conceptual model detailed in Figure 29, being refined and developed from the earlier prototype (and conveyed as the jigsaw puzzle); and enhanced on the basis of the findings of this research, integrates the three frameworks reviewed to assist organisations in gaining their staff's understanding and support whilst facilitating its implementation.

The conceptual framework draws, once again, from Donabedian's 1980 structures, process and outcomes and encompasses the Balanced Scorecard, the Magnet Recognition Program® and a revenue cycle management program.

This integrated patient-centred care conceptual framework consists of capturing and communicating the mission, vision and values of the organisation to all key stakeholders. It is certainly a patient- and a person-centred care model that embraces:

- the simplicity of the Balanced Scorecard to achieve greater focus on strategic objectives, which leads to improved accountability and performance
- the richness of the Magnet Recognition Program®, with its focus on improving the practice environment and therefore patient outcomes of care
- the sophistication of a revenue cycle management program that assists the organisation not only from a financial perspective but also from a clinical practice (length of stay and documentation) enhancement perspective.

The implementation of the Balanced Scorecard at the Hospital provided it with a model to capture, report, evaluate and act on selected variances across the four lenses of the framework. This strategic management tool focused on improving performance by addressing all performance areas within the Hospital as demonstrated by the outcomes of this study.

The Magnet Recognition Program® provided the Hospital with a vehicle to drive further clinical improvements and enhancements in the practice environment, place greater emphasis on practice development and research, and achieve national and international recognition as a quality healthcare facility. It also provided the Hospital with the challenge and commitment to continue with a quality framework that focused on delivering continuous improvement.

The revenue cycle management program assisted the Hospital in improving length of stay management, clinical documentation and the optimisation of revenue that the Hospital was entitled to receive – an imperative and challenge encountered by most healthcare facilities worldwide.

The integration of these three frameworks, together with a resolute and supportive leadership and engaged culture, may create a cogent and compelling leadership and management tool to navigate the many challenges and opportunities facing healthcare providers today and in the future.

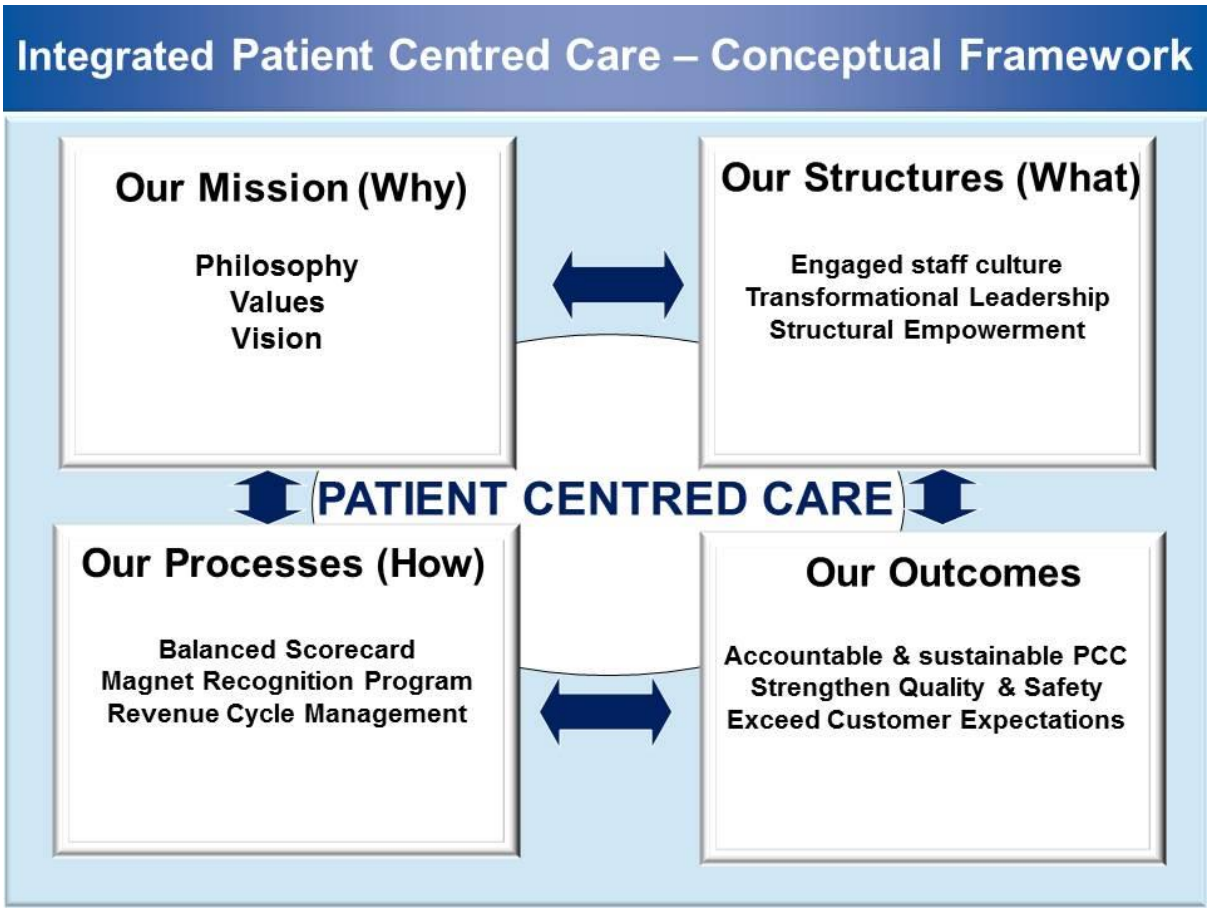

Figure 29. Integrated patient-centred care conceptual framework.

The integrated patient-centred care conceptual framework attempts to provide a lens through which the organisational leadership can conceptualise the work that needs to be done to achieve an accountable and sustainable patient-centred care model.

This conceptual framework offers a number of initiatives contained within each of the three frameworks. For example, it may encourage consideration in investment in human and social capital through structural empowerment and the development of a shared governance structure as contained within the Magnet Recognition Program®. It may also suggest investing in new knowledge, improvement and innovation through enhancing staff education, training and research opportunities. It may facilitate staff buy-in by dispelling the myths associated with patient-centred care, the Balanced Scorecard, the Magnet Recognition Program® and revenue

cycle management. It may also assist by conveying to staff that successful organisations require more than just a single tool, framework or model to succeed in meeting and exceeding the complex and growing healthcare challenges and needs of our community. The integrated patient-centred care conceptual framework is presented in further details and attached in Appendix N. p. 309.

Chapter 7

Conclusion

The Hospital's journey towards an accountable and sustainable patient-centred care model began in 1909, with the Sisters of Charity expressing their mission and devotion to the healing ministry of Christ. I pay tribute to and acknowledge the Sisters' vision and commitment as well as those of countless nurses, doctors and support staff that over the last 106 years have contributed towards this journey.

The aim of this research was to analyse the financial, clinical and cultural impact of the three frameworks – the Balanced Scorecard, the Magnet Recognition Program® and the revenue cycle management program – implemented at St Vincent's Private Hospital, Sydney and determine the effect on the Hospital's overall performance and sustainability.

In the introduction, I highlighted the many challenges faced by the healthcare system and healthcare professionals in meeting the growing and complex demand of our communities. In particular, the pressing need to focus on enhanced safety, quality, patient experience and long-term sustainability. Access to health care and affordability are critical to meet future healthcare priorities. Adopting and implementing frameworks that could assist organisations in enhancing accountability, clinical performance and improving their business model are now more than ever overdue.

As a healthcare leader, the Hospital was compelled to address this challenge and mobilise its staff and organisational resources towards this goal. The Balanced Scorecard, the Magnet Recognition Program® and the revenue cycle management program operated as an integrated framework at St Vincent's Private Hospital, Sydney for the 10-year period from 2005 to 2015, with the aim of improving the overall performance of the organisation.

Could the Hospital have chosen other frameworks instead of the Balanced Scorecard, Magnet Recognition Program® and a revenue cycle management program? The answer is yes. Could the Hospital have achieved similar results? Probably; however, the answer is purely speculative.

The findings suggest that leadership, operational excellence, quality and safety are key imperatives in achieving a sustained improvement in patient-centred care outcomes. I suggest that is up to the leadership of the organisation to determine what frameworks may be appropriate for them to adopt and successfully implement.

The findings also suggest that in isolation each framework addressing specific performance areas may deliver benefits for an organisation. However, the value proposition of the combined impact of them may considerably outweigh their individual performance impact.

The study findings indicate that an integrated patient-centred care model that embraces the simplicity of the Balanced Scorecard to achieve greater focus on strategic objectives may lead to improved accountability and performance. A model adopting the richness of the Magnet Recognition Program®, with its focus on improving the practice environment and therefore patient outcomes of care; and incorporating a revenue cycle management program focusing the organisation, not only on financial but also clinical enhancement of processes and systems, may just be the key towards achieving an accountable and sustainable patient-centred care model.

I expect that this study may contribute to the professional development and growth of not only the Hospital staff but also, hopefully, other healthcare colleagues experiencing similar challenges in meeting the growing healthcare needs of our community.

The task of disseminating this work has already commenced through papers for publications and presentations in other professional and academic milieus.

Strengths and Limitations

The strength of study lies in the quality of the data and the robust analysis of both components of the study. The comprehensive economic evaluation undertaken of the implementation of the three performance improvement frameworks provided findings into a little-researched area, which addressed efficiency, productivity and profitability within a private, not-for profit healthcare facility.

The limitations of the quantitative component of the study included the following:

- No industry standards, nationally or internationally, exist to accurately predict the cost of hospital-acquired pressure ulcers, patient falls, needlestick injuries, and, most importantly, the significant cost of nursing turnover in a labour-intensive healthcare industry. Having said that, whilst there are several studies that have investigated the average costs of patient falls and pressure injuries, they do not identify the incidence and prevalence of them, nor do they predict future costs of these indicators.
- The discount rate used of 5% may overly emphasise short-term gains and give a lesser weight/value to costs that may arise in the distant future.
- Intangibles, such as patient satisfaction and staff engagement and experience, were not included as it is challenging to accurately estimate their value, and the quantification and monetisation of intangibles is particularly susceptible to manipulation.

There were also several limitations of the qualitative component of the study, which included not knowing whether the study would be able to recruit a representative sample of nurses from across all clinical areas. This could have impacted on the capacity to elucidate the recurrent and prevailing understanding and beliefs regarding the incumbent frameworks' ability to assist the Hospital in its pursuit of an accountable and sustainable patient-centred care model. A larger

sample of direct-care nurses may have revealed additional sentiments to those included in the findings.

Whilst efforts were made to remove potential biases such as independently collecting the data (as previously stated) and by providing a balanced analysis of the benefits, challenges and implementation issues, the process of coding, categorising and theming the participants' responses may not have always reflected the most objective and unbiased assessment. The context and timing of the interviews and focus groups was also a potential limitation. The data was collected during a period of real and rapid change across the organisation, and this was keenly felt by participants. Direct-care nurses, in particular, perceived at this time a decrease in their autonomy, independence and capacity to innovate. These perceptions could have accentuated their responses in relation to the areas of challenges and barriers to implementation of these frameworks.

Both the quantitative and qualitative components of the study did not assess the impact of the Australian Council on Healthcare Standards Accreditation program on the performance of the Hospital in all of the indicators used. Whilst I acknowledge and consider its potential impact, which was also mentioned by participants, it was not included in the formulation of the cost-benefit analysis. The Australian Council on Healthcare Standards (ACHS) accreditation framework was regarded as a constant given that this program had been in place at the Hospital for the past 30 years. The ten National Safety and Quality Health Services (NSQHS) standards from the Australian Commission on Safety and Quality in Healthcare (NCSQHC), had been incorporated into the ACHS accreditation program and impacted primarily on improving clinical governance and quality and safety indicators rather than cultural, efficiency and profitability indicators.

There are significant challenges in attributing a causal link between the clinical and safety, human resources and efficiency and financial outcomes achieved to the three frameworks implemented. The assessment of complex interventions (the three frameworks) in health economic evaluations is not simple. There are challenges in determining which of the components or combinations of components may have impacted on the outcome indicators chosen. This is particularly the case in complex systems (hospitals) that behave in a non-linear fashion (change in outcome is not proportional to change in input) (Shiell, Hawe, & Gold, 2008).

With the recent changes to the Australian accreditation standards that have become more clinically focused in terms of outcomes, the causal link between the outcomes achieved and the frameworks implemented was not a straightforward attribution and I suspect the clinical indicators were less attributable and less impactful than the human resources, efficiency and financial indicators.

However, the much greater impact of the financial, governance and cultural indicators (nursing turnover, financial and efficiency) tended to suggest that there may have been a stronger association between the frameworks (enabling strategy focus and enhanced accountability) and the outcomes achieved and further research is required into this area.

Outcomes of the Research

My research findings have developed and expanded on the previous knowledge of the impact of each of the individual frameworks studied and added to the knowledge gap through the examination of their combined impact. Previous studies assessed the benefits, barriers and implementation issues of the Balanced Scorecard (Aguilera & Walker, 2008; Inamdar &

Kaplan, 2002; Kaplan & Norton, 1992, 1993, 1996a, 2001a, 2005, 2006, 2007; Kaplan, Norton, & Rugelsjoen, 2010). Similarly, other studies examined the implementation of the Magnet Recognition Program® (Drenkard, 2010a; Drenkard, 2010b; Kramer, 1990; Kramer et al., 2009; Kramer et al., 2011; Kramer & Schmalenberg, 2004; Lundmark, 2014), and there were studies that examined the benefits and challenges of developing and implementing a revenue cycle management program (Degen, 2010; Mallipeddi, 2010; Mathur & Lorusso, 2012; Rauscher, 2010; Rauscher Singh & Wheeler, 2012). My research concurs with the broad findings related to the frameworks' individual benefits, barriers and implementation issues, but suggests that the use of these three frameworks in combination may better assist organisations striving to achieve an accountable and sustainable patient-centred care model. The integration of the thematic content analysis of the literature leads me to suggest that the Balanced Scorecard, the Magnet Recognition Program® and the revenue cycle management program be incorporated into a single integrated patient-centred care conceptual framework. This framework may assist organisations by supporting them from a strategic management system perspective with the Balanced Scorecard, from a nursing and clinical perspective with the Magnet Recognition Program®, and from a financial and business model perspective with a Revenue Cycle Management program.

This study has also contributed to the literature by exploring the knowledge and practice gaps in Magnet-designated organisations that implement either or both the Balanced Scorecard and a revenue cycle management program to achieve greater sustainability in a patient-centred care model. It has contributed to the body of knowledge by providing an analysis of the benefits, challenges and opportunities that may be derived by adopting these frameworks into an integrated patient-centred care model.

Recommendations

Given the many challenges faced by healthcare leaders in delivering an accountable and sustainable patient-centred care model; one that is accessible, reliable and affordable, the following recommendations are advanced:

- Adopting a strategic management system, to improve accountability and performance; embracing a clinical excellence framework, to achieve an improved practice environment and patient-focused outcomes; and implementing a revenue cycle management program to achieve a robust business model, to support the above two frameworks from a clinical and financial as well as from an overall performance improvement perspective;
- Incorporating the three frameworks into an integrated patient-centred framework that focuses on leadership, quality and safety, people and culture and operational excellence; and,
- Additional research into these frameworks, in combination, is needed in other healthcare settings, including Magnet and non-Magnet-designated facilities to test the proposition of an integrated patient-centred care framework. I hope that this study, being an area of great interest and commitment to me, may be the subject of further post-doctoral research undertaken by myself and others.

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Appendices

Appendix A – Search Strategy

Profit* OR non profit OR not for profit OR revenue OR reimburse* OR productivity OR faith based OR growth OR efficienc* OR sustainab* OR business development OR financial manage* OR budget* OR economic*

AND

magnet N3 designat* OR magnet N2 hospital* OR magnet N3 recognit* OR magnet N2 organization OR magnet N2 status OR magnet N2 model OR magnet N2 accredit* OR (MH "Magnet Hospitals") OR (MH "Magnet Hospital Accreditation")

nurs* N3 indicator* OR (MH "Nursing Outcomes") OR (MH "Nursing Process") OR (MH "Quality of Nursing Care") OR (MH "Clinical Governance") OR (MH "Quality of Healthcare") OR (MH "Quality Assurance") OR (MH "Quality Assessment") OR (MH "Clinical Indicators") OR (MH "Outcome Assessment") OR (MH "Quality Improvement") OR (MH "Benchmarking") OR (MH "Organizations, Nonprofit") OR (MH "Reimbursement Mechanisms") OR (MH "Organizational Culture") OR (MH "Organizational Development") OR (MH "Organizational Objectives") OR (MH "Shared Governance") OR (MH "Reimbursement Mechanisms") OR (MH "Business") OR (MH "Costs and Cost Analysis") OR (MH "Profits") OR (MH "Financial Management") OR (MH "Business Plans") OR (MH "Economic Competition") OR (MH "Economics") OR (MH "Health Services Administration") OR (MH "Organizational Efficiency")

AND

magnet N3 designat* OR magnet N2 hospital* OR magnet N3 recognit* OR magnet N2 organization OR magnet N2 status OR magnet N2 model OR magnet N2 accredit* OR (MH "Magnet Hospitals") OR (MH "Magnet Hospital Accreditation")

accountable care OR balanced score

AND

sustainab* OR profit* OR accountab* OR efficienc* OR cost* OR financial OR revenue* OR accounting OR economic* OR non profit

AND

“healthcare” OR healthcare OR hospital* OR health facilit*

AND

Performance OR quality

Limiters :

Published Date: 20080101-20141231;

Peer Reviewed;

Language: English, Spanish

MH = subject heading

N = near (eg. N2 means magnet within 2 words of accreditation or accredited)

= truncation (eg. Nurs will retrieve nurse/nurses/nursing/nurseries)

Appendix B – Findings from the Literature on Patient-Centred Care

As detailed in Table B1 and Table B2, the literature review on patient-centred care revealed four main benefits, six challenges and three opportunities for the successful implementation of this concept.

Table B1 – Literature Review: Patient-Centred Care. Concept Matrix.

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
1	Ellis (1999)	The patient-centred care Model	British Journal of Nursing	**8**(5): 296-301	Conceptual and theoretical	Care for patients with a physical illness or disability is centred around their compromised physical condition rather than their individual needs.	Often, little attention is given to 'total care' and negotiation with the patient is largely excluded.	This is a multi-professional, reflective model which facilitates an unbiased and non-presumptuous approach.	Although the model was devised and piloted within a hospice it has the potential to be adapted for use in any healthcare setting.
2	Fuller et al. (2004)	Is client-centred care planning for chronic disease sustainable? Experience from rural	Health & Social Care in the Community	**12**(4): 318-326	Qualitative evaluation. Consultation with a range of five stakeholder types over two stages.	Some dissatisfaction was found with care planning when it did not involve close multidisciplinary teamwork.	Care planning should deal with a wider range of issues than just medical management, and so it took longer, which raised its sustainability in general practice under the current	Satisfaction with the care planning and self-management approach used in the project.	Whilst the issue of sustainability has been identifed in this evaluation, the suggested ways forward will require further work.

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
		South Australia.					funding through the national health insurance program.		
4	Birks and Watt (2007)	Emotional intelligence (EI) and patient-centred care.	Journal of the Royal Society of Medicine	**100**(8): 368-374.	Literature review	EI may assist patients and clinicians in delivering patient-centred care.	While EI is an appealing prospect to some, its benefits to clinical practice, education and selection in any health care discipline have yet to be adequately explored.	This paper explores what is meant by EI, reviews research on its utility and discusses ways in which EI might be usefully applied in enhancing the quality of patient-centred care.	Further research into EI and patient-centred care is required.
5	Robinson et al. (2008)	patient-centred care and adherence: definitions and applications to improve outcomes.	Journal of the American Academy of Nurse Practitioners	**20**(12): 600-607.	Review of the literature	The implementation of patient-centred care has been hampered by the lack of a clear definition and method of measurement.	Patient-centred care is a key factor in improving the quality of health care, increasing patient adherence and eventually reducing healthcare costs.	Identify the fundamental characteristics of patient-centred care to clarify its definition.	Promoting patient-centred care activities will improve adherence and encouarge patient responsibility for health status.

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
7	McCormack et al. (2010)	Exploring person-centredness: a qualitative meta-synthesis of four studies.	Scandinavian Journal of Caring Sciences	**24**(3): 620-634.	A qualitative meta-synthesis of four studies.	Person-centredness as a concept is becoming more prominent and increasingly central within some research literature, approaches to practice and as a guiding principle within some health and social care policy.	Despite the increasing body of literature into person-centred nursing (PCN), there continues to be a 'siloed' approach to its study, with few studies integrating perspectives from across nursing specialties.	A qualitative meta-synthesis was undertaken of the data derived from the four unrelated research studies with different client groups with long-term health conditions. A hermeneutic and interpretative approach was used to guide the analysis of data and framed within a person-centred nursing framework.	The person-centred nursing framework has utility in helping to understand the dynamics of the components of person-centredness and overcoming the siloed nature of many current perspectives.
8	Pelzang (2010)	Time to learn: understanding patient-centred care.	British Journal of Nursing	**19**(14): 912-917.	This article is a literature review of the definition, models and methods of implementation of patient-centred care (patient-centred care).	Modern healthcare systems are rapidly changing to adopt a more patient centred approach to care.	However, the implementation of patient-centred care can be hampered by the lack of a clear definition and methods of measurement It is increasingly important for healthcare providers to understand the core	This article examines the literature to carry out a concept analysis of patient-centred care, including definition, concepts and theoretical perspectives.	Implementation of patient-centred care requires a planned and cordinated approach, with sufficient staff, efficient teamwork and adequate education of HPs.

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
							elements of patient-centred care.		
9	Joseph et al. (2011)	An examination of the sustainable adoption of whole-person care (WPC).	Journal of Nursing Management.	**19**(8): 989-997	Interpretative phenomenology.	WPC was 'lived'	The results support the Institute of Medicine's call for nurses to take the lead in adopting innovations and provides leaders with actionable strategies.	King's theory of goal attainment was used to focus an examination of whole-person care (WPC) and to extend the range of knowledge needed for WPC and nursing practice.	Fostering a workplace climate that enables the diffusion of innovative models of care.
10	Finset (2011)	Research on PC Clinical care	Journal of Evaluation in Clinical Practice	**17**(2): 384-386.	Descriptive and selective review of relevant literature.	Person-centred clinical care may have positive effects on patient satisfaction, patient adherence,health care utilization, malpractice litigation and health outcome.	Person-centred communication skills may be promoted by way of communication skills training. The concept of person-centred care is rare in the empirical literature.	Selective review of empirical studies on person-centred clinical care.	Future research should operationalize the concept and design studies of the impact of patient-centred clinical care.
11	Luxford et al. (2011)	Promoting patient-centred care: a qualitative study of	International Journal for Quality in Health care.	1-6	Qualitative study. Semi structured interviews.	Need organisation wide effort and support.	Supportive IT and quality of the built environment did not emerge as important themes in advancing patient-centred care.	Interviewed 8 HCOs across USA with a reputation for promoting patient-centred care.	The study findings supports the importance of an organisation wide approach for successfully

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
		facilitators and barriers.							advancing patient-centred care.
12	Lawrence and Kinn (2012)	Defining and measuring patient-centred care: an example from a mixed-methods systematic review of the stroke literature.	Health Expectations	**15**(3): 295-326.	Mixed Method Review	It is important for health-care professionals to ensure that their practice is relevant to patients and families.	To deliver effective patient-centred care, HPs need to be working in a culture that supports such an approach and they need to be appropriately equipped.	Identify stroke-specific patient-centred outcome measures and patient-centred s.	The review identified three stroke-specific patient-centred outcome measures and informed the development of a definition of patient-centred care.
13	Kitson et al. (2013)	What are the core elements of patient-centred care.	Journal of Advanced Nursing	**69**(1): 4-15.	Narrative Lit Rev and synthesis.	Three core themes, however, were identified: patient participation and involvement, the relationship between the patient and the healthcare professional and the context where care is delivered.	Different professional groups tend to focus on or emphasize different elements within the themes.		Little research has been undertaken to determine its outcomes for patients and nurses.

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
14	Thórarinsdóttir and Kristjánsson (2014)	Patients' perspectives on person-centred participation in health care: A framework analysis.	Nursing Ethics	**21**(2): 129-147.	Concept Analysis	Patient-centred care was found to be based on patient's experience; values; preferences; and needs. Respect & equity were central.	Critically analyse the concept of patient-centred care from a patient's perspective.	Patient-centred care attributes were identified and contrasted to non patient-centred care.	This study challenges earlier concept analyses of the term 'patient participation', as well as the Charles model, the most cited model of shared decision making.
15	Zolnierek (2014)	An Integrative Review of Knowing the Patient.	Journal of Nursing Scholarship	**46**(1): 3-10.	Cumulative Index to Nursing and Allied Health relevant peer-reviewed literature from 1996 through 2013.	Knowing the affect nurses' ability to provide safe care, develop positive relationships, and engage in expert practice.	The process of knowing the patient occurs within the context of relationship with the patient and in an environment that is temporal in nature.	A literature review was conducted to identify primary source publications concerned with knowing the patient within the nursing discipline.	Findings inform the development of professional practice models that support knowing the patient.

Table B2 – Main Themes and Concepts Related to Patient-Centred Care

Patient-centred care benefits		
1	patient-centred care is a key factor in improving quality and safety	Ellis (1999); Robinson et al. (2008); Olsson et al. (2009)
2	patient-centred care can lead to a reduction in healthcare costs	Robinson et al. (2008); Olsson et al. (2009)
3	patient-centred care can be a driver for the development of innovative models of care	Joseph et al. (2011); Zolnierek (2014)
4	patient-centred care is linked to patient satisfaction	Fuller et al. (2004); Finset (2011); Thórarinsdóttir and Kristjánsson (2014)
Patient-centred care challenges		
1	There is lack of patient-focused care	Ellis (1999); Robinson et al. (2008); Olsson et al. (2009)
2	Lack of interdisciplinary teamwork in health care	Ellis (1999); Fuller et al. (2004); McCormack et al. (2010); Kitson et al. (2013)
3	Lack of patient-centred care clear definition and method of measurement	Robinson et al. (2008); Pelzang (2010)
4	There are sustainability issues with patient-centred care	Fuller et al. (2004)
5	patient-centred care implementation requires an organisational-wide support	Luxford et al. (2011); Lawrence and Kinn (2012)
6	Patient-centred care requires development of integrated care pathways, both speciality-based and generic.	Olsson et al. (2009) Lawrence and Kinn (2012)
Patient-centred care opportunites		
1	Development of patient-centred care frameworks	McCormack and McCance (2006); McCormack et al. (2010); Zolnierek (2014)
2	Education and training as well as emotional intelligence training is required	Birks and Watt (2007)
3	The patient-centred care concept is rare in the empirical literature	McCormack and McCance (2006); Birks and Watt (2007); Finset (2011); Kitson et al. (2013)

Table B3 – Classification of Articles and Studies Related to Patient-Centred Care

There were 15 articles included in the patient-centred care literature review

1	Conceptual/theoretical (4)	Ellis (1999); McCormack and McCance (2006); Olsson et al. (2009); Thórarinsdóttir and Kristjánsson (2014)
2	Qualitative/evaluative (3);	Fuller et al. (2004); McCormack et al. (2010) Luxford et al. (2011)
3	Literature Review (6)	Birks and Watt (2007); Robinson et al. (2008); Pelzang (2010); Finset (2011); Kitson et al. (2013); Zolnierek (2014)
4	Interpretative phenomenology (1)	Fuller et al. (2004)
5	Mixed method review (1)	Joseph et al. (2011)

Appendix C – Findings from the Literature on Balanced Scorecard

As detailed in Table C1 and Table C2, the literature review on Balanced Scorecard revealed four main benefits; four challenges and three opportunities for the successful implementation of this concept.

Table C1 – Literature Review: Balanced Scorecard (BSC). Concept Matrix.

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
1	Meliones (2000)	Saving money, saving lives.	Harvard Business Review	**78**(6): 57-62, 64, 66.	Conceptual; descriptive; organisational case study	A noble mission doesn't guarantee financial solvency. "No margin, no mission"	Duke Children's hospital had a $11 million annual operating loss	Implemented the BSC methodology, accompanied by reams of data; teamwork and sense of humour	Achieved a $29 million reduction in costs over four years without staff cutbacks.
2	Inamdar and Kaplan (2002)	Applying the Balanced Scorecard in Healthcare Provider Organizations.	Journal of Healthcare Management	**47**(3): 179.	Qualitative study, conducted structured interviews of 10 CEOs/ COO and Executives of healthcare facilities	The Balanced Scorecard can become a valuable tool for healthcare executives	Identified seven Balanced Scorecard benefit themes; seven challenges and barriers and five guidelines for its successful implementation	Examined the drivers for implementation; the benefits; barriers, and developed a guide for successful application of the Balanced Scorecard	The study findings revealed measuarable performance improvement in financial results and customer satisfaction.

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
3	Zelman et al. (2003)	Use of the balanced scorecard in health care.	Journal Of Healthcare Finance	**29**(4): 1-16.	Conceptual; descriptive	The Balanced Scorecard is relevant to health care; is used widely; used for operational and strategic purposes; requires timely and accurate information; and adopted additional perspectives.	As with any innovation, the Balanced Scorecard can be expected to go through a product life cycle of introduction, growth, maturity and decline.	Reviews the use of the Balanced Scorecard in health care	The Balanced Scorecard is relevant to health care but modifications to reflect industry and organisational realities is necessary.
4	Yap et al. (2005)	A comparison of systemwide and hospital-specific performance measurement tools.	Journal Of Healthcare Management	**50**(4): 251-262.	Mixed method study	System-level scorecards (SLS) may assist hospitals in developing institution-specific scorecards.	Hospitals' efficiency and human resources require further examination using SLSs.	The study examined the uptake, (a framework based on the Balanced Scorecard) for 22 acute care and 2 non-acute care facilities.	SLS appears to be an important tool used by healthcare institutions to measure their individial performance.

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
5	Walker and Dunn (2006)	Improving hospital performance and productivity with the Balanced Scorecard.	Academy of Healthcare Management Journal	**2**: 85-110.	Conceptual, theoretical	This paper aims to address how to measure productivity within a Balanced Scorecard system	Heighten competition; pressure from health insurance funds; and raising healthcare costs requires managers to adopt the Balanced Scorecard as a performance measurement system	The Balanced Scorecard implementation requires some creativity, initiative and cooperation from all relevant stakeholders	This paper may assist hospital managers seeking to improve their performance and productivity.
6	Chan (2006)	An Analytic Hierarchy Framework for Evaluating Balanced Scorecards of Healthcare Organizations.	Canadian Journal of Administrative Sciences (Canadian Journal of Administrative Sciences)	**23**(2): 85-104.	Conceptual, theoretical	Despite the potential Balanced Scorecard benefits, there are challenges implementing the Balanced Scorecard such as: judgement biases; information overload; and information synthesis.	Top leadership engagement and drive; buy-in of medical and administrative staff, and infrastructural support are crucial for the Balanced Scorecard success.	This paper applies the analytic hierarchy process (AHP) to hospital scorecards	The AHP has been advocated as a usuful tool in facilitating the implementation of the Balanced Scorecard.
7	Wicks and St Clair (2007)	Competing values in health care: balancing the	Journal Of Healthcare Management	**52**(5): 309-323.	Conceptual, theoretical	The Balanced Scorecard is actually unbalanced.	The Balanced Scorecard has three conceptual limitations: it	This paper looks at the competing values framework (CVF) approach	The CVF incorporates all of the four Balanced Scorecard perspectives with a greater emphasis

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
		(un)balanced scorecard.					underemphasises the employee perspective; is founded on a control-based philosophy; and emphasises making trade-offs.	which is based on four imperatives: competing; controlling; collaborating and creating.	of the people perspective.
8	Aguilera and Walker (2008)	A New Framework to Ensure Excellence in Patient-focused Care: The Nursing Directorate's Balanced Scorecard Approach.	Asia Pacific Journal of Health Management	**3**(2): 25.	Conceptual; descriptive; organisational case study	The Balanced Scorecard helps managers and staff execute strategy by turning agreed initiatives and accountabilities into action.	Unless their commitment to strategy within all levels of the organisation, the Balanced Scorecard successful implementation is unlikely to be realised.	This paper discusses the methods by which enhanced clinical and corporate governance is achieved.	The Balanced Scorecard can assist healthcare organisations to achieve improvement in patient-focused care.
9	Lorden et al. (2008)	The Balanced Scorecard framework-a case study of patient and employee satisfaction: what happens when it does not work as planned?"	Healthcare Management Review	**33**(2): 145-155.	Organisational case study; mean quarterly patient satisfaction scores for inpatient and outpatient services	The successful implementation of the Balanced Scorecard was hindered by the lack of transparency by management, particularly in the financial perspective	Inpatient patient satisfaction scores exhibited a non-significant upward trend. Outpatient satisfaction increased and employee satisfaction declined.	This case study was conducted to identify learnable lessons and confounding factors associated with the successes and failures of Route 99	Patient and staff satisfaction highlighted the importance of management transparency, leadership support, and the appropriate metric selection

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
10	Chu et al. (2009)	A study of a nursing department performance measurement system: using the Balanced Scorecard and the Analytic Hierarchy Process.	Nursing Economic$	**27**(6): 401-407.	Organisational case study	The implementation of the Balanced Scorecard-based incentive plan motivated nurses to improve performance in their respective departments	Data accuracy, reliability and analysis depended on the responses to the questionnaires. Data from only one hospital department was examined.	The Analytical Hierarchy Process (AHP) was used to determine the relative weights of the performance measures and assess the appropriateness of the Balanced Scorecard –based incentive plan.	This study contributes to the literature by demonstrating the performance improvement that results from integrating the Balanced Scorecard with an incentive plan in the nursing field
11	Shoemaker and Fischer (2011a)	Creating a nursing strategic planning framework based on evidence.	The Nursing Clinics Of North America	**46**(1): 11-25.	Conceptual and descriptive	Use of the Balanced Scorecard and Magnet Recognition® as evidence-informed strategic planning frameworks	How to enhance quality; improve care delivery and service, control costs and increase market share.	Focused strategic thinking and planning is required to aim for its continual renewal	Assist other healthcare facilities to survive and prosper

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
12	Rodgers (2011)	Organisational critical success factors influencing balanced scorecard systems in UK health care.	Journal of Management & Marketing in Health care	**4**(3): 174-179	Conceptual and descriptive	The primary purpose of operating a Balanced Scorecard in health care is to ensure long-term adaptation and survival	Senior management must pro-actively and effectively manage the full range of critical success factors and incorporate them into a local tailored and relevant Balanced Scorecard	This paper outlines the current critical success factors that may influence the success of a Balanced Scorecard system within the UK, with a focus on England	The paper groups the ten CSF identified into four categories: strategic purpose; design and process; contextual integration and human resources management
13	Grigoroudis et al. (2012)	Strategic performance measurement in a healthcare organisation: A multiple criteria approach based on balanced scorecard.	Omega	**40**(1): 104-119.	Conceptual; theoretical Organisational case study	The main advantage of the UTASTAR method is that the necessary required information can be easily collected.	The most critical issue for the successful implementation of the proposed Balanced Scorecard is staff participation and revisions of the scorecard	This study is based on a MCDA approach, where the UTASTAR method is used to aggregate the marginal performance of KPIs within the Balanced Scorecard	This study may assist organisations in evaluating and revising their strategy and adopting modern management approaches

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
14	McDonald (2012)	A Review of the Use of the Balanced Scorecard in Health care	www.bmcdconsulting.com	1-35	Literature review based on published and unpublished papers and reports from 2001-2011.	Providing high quality patient-centred care that is safe and evidence based is a major challenge for health systems throughout the world.	The health system is complex; change is constant and subject to a linked chain of effects connecting multiple stakeholders; and oversimplification of the health system is as common as it foolhardy.	Five questions structure, examining: Healthcare delivery and the Balanced Scorecard; Its successes; implementation; learnings and challenges	Share the main learnings, insights and case studies of successful implementation of the Balanced Scorecard.
15	Trotta et al. (2013)	Applying the Balanced Scorecard approach ing teaching hospitals: a literature review and conceptual framework.	The International Journal Of Health Planning and Management	**28**(2): 181-201.	Literature review based and conceptual framework	There is an urgent need to manage the complex dynamics and inefficiency issues that threaten the survival of teaching hospitals worldwide	The proposed conceptual model integrates a research perspective and a teaching perspective within the traditional Balanced Scorecard methodology	The paper aims at developing a Balanced Scorecard framework that is suitable for assessing the performance of teaching hospitals	This paper contributes to the ongoing debate on performance evaluatuion systems and may assists scholars and practitioners, in particular those in teaching hospital

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
16	Hoque (2014)	20 years of studies on the balanced scorecard: Trends, accomplishments, gaps and opportunities for future research.	The British Accounting Review	**46**: 33-59.	Literature review	The Balanced Scorecard is a successful concept and a useful, effective performance measurement and strategic management tool	Providing value to today's customers is very different how it was in the past. Increase in customer demands and expectations require organisations to focus the Balanced Scorecard on meeting customers' taste and preferences.	This paper examines the past 20 years of research into the Balanced Scorecard and its implementation in organisations worldwide	The author states that there is a lack of theory-driven research on the Balanced Scorecard
17	Behrouzi et al. (2014)	Applications of the balanced scorecard for strategic management and performance measurement in the health sector.	Australian Health Review: A Publication of the Australian Hospital Association	**38**(2): 208-217.	Qualitative study	The Balanced Scorecard is a successful performance measurement tool even for national-level healthcare organisations	The development of a generic Balanced Scorecard would cater for all types of healthcare organisations.	This study aimed at gaining insight into the implementation of the Balanced Scorecard in healthcare organisations over the past ten years	It can assist organisations, managers and decision makers thinking about implementing a Balanced Scorecard

Table C2 – Main Themes and Concepts Related to the Balanced Scorecard

Benefits		
1	Balanced Scorecard is a strategic management tool	Kaplan and Norton (1992, 1996, 1996, 2000, 2001, 2005, 20007, 2010); Inamdar and Kaplan (2002); Zelman et al. (2003); K. B. Walker and Dunn (2006); Aguilera and Walker (2008); Lorden et al. (2008); Shoemaker and Fischer (2011a); McDonald (2012) Hoque (2014); Behrouzi et al. (2014)
2	Balanced Scorecard may lead to a reduction in healthcare costs	Meliones (2000); Inamdar and Kaplan (2002); Shoemaker and Fischer (2011a)
3	Balanced Scorecard focuses on efficiency, productivity, improved performance and accountability	Walker and Dunn (2006); Aguilera and Walker (2008); Chu et al. (2009); Shoemaker and Fischer (2011a); Grigoroudis et al. (2012)
4	Balanced Scorecard may improve quality of care and patient satisfaction	Aguilera and Walker (2008); Lorden et al. (2008); McDonald (2012); Hoque (2014)
Challenges		
1	Obtaining leadership commitment and engagement	Kaplan and Norton (1992, 1996, 1996, 2000, 2001, 2005, 20007, 2010); Inamdar and Kaplan (2002); Chan (2006); Aguilera and Walker (2008); Rodgers (2011); Hoque (2014)
2	Deciding the right measures/indicators	Kaufmann and Becker (2005); Hoque (2014)
3	Obtaining timely and accurate data	Zelman et al. (2003); Fuller et al. (2004)
4	Sustainability and adequate resourcing	Möller and Schaltegger (2013)
Opportunities		
1	Balanced Scorecard is customisable to most healthcare facilities	Zelman et al. (2003); Yap et al. (2005); Behrouzi et al. (2014)
2	Education and training as well as emotional intelligence training is required	Kaplan and Norton (1992, 1996, 1996, 2000, 2001, 2005, 20007, 2010); Inamdar and Kaplan (2002); Hoque (2014)
3	The Balanced Scorecard concept is rare in the empirical literature	Hoque and James (2000); Hoque (2014)

Table C3 – Classification of Articles and Studies Related to the Balanced Scorecard

There were 17 articles included in the Balanced Scorecard literature review

1	Conceptual/theoretical/descriptive (6)	Zelman et al. (2003); Walker and Dunn (2006); Chan (2006); Wicks and St Clair (2007); Shoemaker and Fischer (2011a); Rodgers (2011)
2	Qualitative/evaluative (2)	Inamdar and Kaplan (2002); Behrouzi et al. (2014)
3	Literature Review (3)	McDonald (2012); Trotta et al. (2013); Hoque (2014)
4	Mixed method review (1)	Yap et al. (2005)
5	Organisational case study (5)	Meliones (2000); Aguilera and Walker (2008); Lorden et al. (2008); Chu et al. (2009); Grigoroudis et al. (2012)

Appendix D – Findings from the Literature on the Magnet Recognition Program®

As detailed in Table D1 and Table D2, the literature review on Magnet Recognition Program® revealed four main benefits; three challenges and three opportunities for the successful implementation of this program.

Table D1 – Literature Review: Magnet Recognition Program® (MRP). Concept Matrix.

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
1	Kuhar et al. (2004)	The Cleveland Clinic's Magnet experience.	Orthopaedic Nursing	23(6): 385-390.	Conceptual, narrative, descriptive	Certain structures, processes and outcomes must exist prior to Magnet consideration.	Achieving Magnet designation is more than reaching the destination but taking the journey.	The pursuit of Magnet status implies a belief that the organisation is already a "Magnet like" facility.	Depicts the journey undertaken at the Cleveland Clinic and suggest techniques and tips to engage staff in the journey.
2	Armstrong (2005)	Magnet hospitals: what's the attraction?	Australian nursing journal	12(8): 14-15, 17.	Conceptual, theoretical, narrative	The resources required to achieve Magnet recognition is significant. Organisation could adopt the Magnet principles without undertaking the	Can it work in Australia? Is it just for nurses? How will magnet benefit Australian nurses? Are Magnets the answer to global nursing workforce shortages?	Analytical review and answers are provided to all the questions posed based on existing research on the Magnet experience.	Contextualises the Magnet Recognition Program® and analyses it potential application in the Australian environment

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
						journey and cost associated with it.			
3	Pinkerton (2005)	The financial return on Magnet recognition	Journal of Continuing Education in Nursing	36(2): 51-52.	Conceptual, narrative, descriptive	Embarking on the Magnet journey takes time, patience, knowledge, planning and a budget.	Many organisations hesitate to take the Magnet journey, due to concerns related to resources and costs associated with the program.	The return on the Magnet investment is considerable and needs to be considered, recognised and acknowledged.	Creating a Magnet culture is an investment in the staff, the future by creating a positive impact on the organisation bottom line.
4	Joyce and Crookes (2007)	Developing a tool to measure 'magnetism' in Australian nursing environments.	Australian Journal of Advanced Nursing	25(1): 17-23.	Mixed method study	The impact of Magnet principles on patients, staff and the organisation, it warrants the development of this tool.	The focus groups identified three main issues: language; contextual meaning; and presentation.	A two stage approach: Focus groups and questionnaire were utilised to produce the tool.	The revised version of the tool generates reliable data on Magnet features in Australian health facilities. It may assist with nursing staff retention and positive health outcomes.

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
5	Aiken et al. (2008)	Transformative impact of Magnet designation: England case study	Journal of Clinical Nursing	17(24): 3330-3337.	Cross-sectional survey. Pre and post design comparison Organisational case study.	Nursing practice environment are positively impacted by the implementation of Magnet principles.	Poor practice environments negatively impact staff culture and patient outcomes	Nurse practice environment was measured with the Nursing Work Index-Revised (NWI-R) tool.	The study suggested that the Magnet Recognition Program® was feasible to implement outside USA.
6	Sanders and Davey (2010)	A review of the Magnet hospital concept from the perspective of organisationa; behaviour	Allied Academies International Conference: Proceedings of the Academy of Healthcare Management (AHCM)	7(1): 30-33.	Literature review, conceptual and theoretical	Most of the research on Magnet to date has been conducted by nursing researchers and in acute care settings.	Whilst nursing researchers need to be commended for their effort, their research has been of questionable rigor.	Organisational behaviour scholars need to begin investigating Magnet to expand the breadth and depth of this research.	Continued scholarly research into Magnet will improve our understanding of the behaviour of "magnetism" and the benefits to healthcare outcomes.
7	Russell (2010)	Journey to Magnet™: Cost vs. Benefits.	Nursing Economic$.	28(5): 340-342	Conceptual, narrative	Improvements in turnover alone are a major benefit of the Magnet journey.	Keeping nurses engaged throughout the journey; Expanding shared governance; and resourcing education and research were main issues across magnet facilities.	Interviews on the costs and benefits of the Magnet journey were conducted with several CNOs by the author.	Highlight the cost benefits associated with the Magnet journey, in particular those associated with turnover and engagement.

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
8	Drenkard (2010a)	The business case for MAGNET	Journal of Nursing Administration	40(6): 263-271	Conceptual, theoretical	A competent, productive, efficient and effective nursing service can deliver reduced cost and better healthcare outcomes.	The CNO need to secure the CEO and CFO commitment to the Magnet program through the demonstration of a strong value proposition for key stakeholders within the organisation.	The CNO is required to formulate a robust business case for the Magnet journey, highlighting the cost and benefits.	Articulating the value of the nursing service through an improved staff culture and increase patient experience and clinical outcomes is key to the support for the Magnet journey.
9	Kramer et al. (2011)	Clinical nurses in Magnet hospitals confirm productive healthy unit work environments	Journal of Nursing Management	19(1): 5-17.	Descriptive study	Healthy work environments (HWE) are essential to achieve improved staff and patient satisfaction and improved outcomes of care.	HWE relates to what takes place within each hospital and individual clinical unit. A HWE is not impeded by demographic and work variables. The development of HWE is a professional responsibility of all nurses.	Experienced nurses in 34 Magnet hospitals completed the essential of magnetism II (EOMII) instruments to measure healthy work environments.	Nurses leaders must empower clinical nurses to envison HWE as key to improve quality and safety and staff and patients satisfaction and experience.

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
10	Kelly et al. (2012)	Nurse outcomes in magnet® and non-magnet hospitals.	Journal of Nursing Administration	42(SUPPL. 10): S44-S49.	Cross sectional quantitative study	The key objective of Magnet hospitals is to create supportive professional nursing care environments.	A recently published paper found little difference in work environments between magnets and non-magnet hospitals.	A secondary data analysis from 4 state survey of 26,276 nurses in 567 acute care hospitals was conducted to evaluate differences between Magnet and non-magnets.	Three decades of evidence demonstrating superior work environments of magnets, which deserves the attention of hospital leaders, nurses and the public.
11	Jenkins and Jarrett-Pulliam (2012)	A Comparative of Magnet® Organizations and Accountable Care Organizations.	JONA's Healthcare Law, Ethics And Regulation	14(2): 55-63.	Conceptual, theoretical and narrative	ACOs and Magnets are both required to demonstrate patient centredness.	Whilst Magnet is a commitment to excellence and thus recognition, its focus is not reimbursement and healthcare affordability.	Magnet organisations need to become more focused on productivity, efficiency, access and affordability. These organisations are not instantly created but they may lead the way in healthcare.	Quality and efficiency are today's requirements and expectation from key stakeholders. Magnets and ACOs combined are key to transforming healthcare.
12	Walker and Aguilera (2013)	The international Magnet® journey.	Nursing Management	44(10): 50-52.	Conceptual, descriptive organisation experience	The Magnet advantage is yet to be fully appreciated internationally.	The ANCC should seriously consider ways in which to promote the Magnet Recognition Program® beyond the borders of USA.	The Magnet journey at SVPHS was in motion for many years prior to recognition in 2011. The journey was a true collaborative exercise from nurses	There is compleling evidence based on 30 years of research in various jurisdictions that the Magnet

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
								at all levels of the organisation.	principles can generate improved outcomes beyond the USA.
13	Heitmann et al. (2013)	From Magnet-Hospital to the Hospital of the Future."	Nursing and Health	1(4): 78-87.	Explanatory and descriptive study	Whilst the Magnet Recognition Program® offers a potential model, a direct transfer of the Magnet Recognition Program® to European conditions seemed to be limited.	A European model seeks to achieve a more integrated nursing profession into the hospital's structures, leading to the attraction and retention of nurses, as well as increasing professionalism and quality.	Based on the Magnet program experience, the development of a European conceptual framework for the Hospital of the future is proposed.	The study explores the requirements of the Hopsital of the future and focus on improving the connections of nurses within the hospital structures
14	Higdon et al. (2013)	Business case for Magnet® in a small hospital.	The Journal Of Nursing Administration	43(2): 113-118.	Conceptual theoretical	There is minimal evidence of the benefits of Magnet Recognition for a small hospital (<100 beds).	The challenge for leaders of small hospital is to develop a compelling business case for the need to undertake the Magnet journey, highlighting the cost and benefits to be derived.	A development of a business strategy and a cost benefit analyses (cost benefit analysis) is presented.	The article provides an evidence-based business case and suggestions for a cost benefit analysis and a strategy map for small hospitals.

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
15	Mills and Gillespie (2013)	Effect of Magnet hospital recognition on 2 patient outcomes.	Journal Of Nursing Care Quality	28(1): 17-23.	Retrospective secondary data analysis	The study found no significant differences between Magnet and non-Magnets in pressure ulcers and failure to rescue.	There is uncertainty of the accuracy of data collection in patients records and coding, reflecting on failure to rescue.	Examined the relationship between Magnet status and non-Magnets on 2 clinical indicators; pressure ulcers and failure to rescue.	As hospital numbers have almost doubled since the study, reserachers should continue measuring the impact of Magnet on patient's outcomes.
16	McHugh et al. (2013)	Lower Mortality in Magnet Hospitals.	Journal of Nursing Administration	S4-s10	Retrospective secondary data analysis	Magnet hospitals have better mortality and failure to rescue outcomes than non-Magnets.	Magnet hospital better outcomes may be attributed to highly educated nurses and supportive nursing professional practice environments.	Examined the relationship between Magnet status and non-Magnets on practice environments; mortality and failure to rescue rates.	The growth of Magnets is 10 fold since the first paper was written about examining their impact on patient's outcomes. The evidence is growing.
17	Krueger, Funk, Green, and Kuznar (2013)	Nurse-related variables associated with patient outcomes: A review of the literature 2006–2012	Teaching & Learning in Nursing	8(4): 120-127.	Literature review	Improved nurse staffing; nurse-physician relationships; nurses involvement in hospital decisions; and managerial support for nurses	Increasing staffing, education of practice environment individually will not improve patient's outcomes. It requires an eclectic approach.	The study examined 8 nursing related variables impacting on patient outcomes.	Improvement in patient's outcomes require attention in multiple areas. However, staffing remains the most consistent

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
						may lead to improve patient's outcomes.			positive variable influencing outcomes of care.
18	Smith (2014)	Magnet Hospitals: Higher Rates of Patient Satisfaction	Policy, Politics & Nursing Practice	15(1/2) : 30-41.	Retrospective secondary data analysis	Magnet hospitals and Magnet in progress have significantly higher scores than non-Magnets on six of the seven questions reporting on patient satisfaction with care.	The cross-sectional rather than longitudinal nature of the study limited the collection of data to a single period impeding the analysis of trends.	Future studies should consider a longitudinal approach looking at data over an extended period of time.	This study may encourage hospitals considering adopting the Magnet principles to achieve improved patient experience.
19	Jayawardh ana et al. (2014)	Is there a business case for magnet hospitals? Estimates of the cost and revenue implications of becoming a magnet.	Medical Care	52(5): 400-406.	Quantitative study	Magnet hospitals are positively and significantly associated with both inpatient costs and net inpatient revenue	Although is costly to achieve Magnet status, these cost are offset by higher net inpatient income	Examined the impact of Magnet status on inpatient's costs and revenue against non-Magnet hospitals	The only study that has explores the effect of Magnet status on inpatient costs and net inpatient revenue.
20	Lundmark (2014)	Magnet® Environments and the Affordable Care Act.	Journal of Nursing Administrati on	44(4): 187-189.	Conceptual, descriptive	Positive and supportive nursing practice environments are critical to	The affordable care Act identified three long-term goals for improving quality and safety; reducing unnecessary	Additional research may increase the understanding of how better work environment lead to	Magnet positive, supportive and professional nursing parctice environment are linked to the

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
						providing patient quality and safety	admissions and re-admissions; adverse events; and inappropriate or unnecessary care.	improved patient care.	objectives of the Affordable Care Act.
21	Chen et al. (2014)	Is the hospital's magnet status linked to HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems) scores?	Journal Of Nursing Care Quality	29(4): 327-335.	Cross sectional secondary data analysis	There is a significant link between Magnet hospitals and higher HCAPS scores.	The study found a moderate to strong reverse relationship between the percentage of African American patients and HCAPS scores. Greater cultural competency may improve HCAPS scores from minorities.	The study examined HCAPS scores in 110 Illinois Hospitals report card from Magnet and non-Magnet hospitals.	The pursue of Magnet recognition could be a promising avenue for improving HCAPS scores.
22	Walker et al. (2014)	Supporting a healthy culture results of the practice environment scale, Australia in a Magnet A Designated Hospital."	Journal of Nursing Administration	44(12): 653-658.	Quantitative organisational case study	A growing body of research reveals that the practice environment (PE) is influenced by culture. A supportive PE is positively correlated to improved patient's experience and outcomes of care.	There is limited data available for comparison within the Australian context and the US comparison data was measured some years ago.	The PES-AUS survey was administered with a sample of 522 RNs.	Magnet recognition has a strong impact on nurse perceptions of the PE and perhaps more so at the time of designation than beyond.

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
23	Wolf et al. (2014a)	The Developmental Levels in Achieving Magnet (R) Designation, Parts 1 and 2	JONA	44(3): 136-141. 44(4): 196-200.	Conceptual, theoretical	A developmental model may assist in transforming a unit or department and creating a Magnet culture. Leadership is key in assisting with this transformation.	The healthcare system requires transformation and the question is how to achieve it.	The Nelson and Burns' "High Performance Programming Model" is applied to the Magnet model to assist with transformation towards the journey to Magnet designation.	Magnet facilities showcase teams and cultures that are leading the way for the future of healthcare.

Table D2 – Main Themes and Concepts Related to the Magnet Recognition Program®

Benefits		
1	Magnet Recognition Program® is a key factors in improving quality and safety	Kuhar et al. (2004); Russell (2010); Drenkard (2010a); Kramer et al. (2011); Walker and Aguilera (2013); McHugh et al. (2013) ; Krueger et al. (2013); Smith (2014); Lundmark (2014); Chen et al. (2014); Walker et al. (2014)
2	Magnet Recognition Program® is linked to patient satisfaction	Kuhar et al. (2004); Russell (2010); Drenkard (2010a); Kramer et al. (2011); Walker and Aguilera (2013); McHugh et al. (2013) ; Krueger et al. (2013); Smith (2014); Lundmark (2014); Chen et al. (2014); Walker et al. (2014)
3	Magnet Recognition Program® practice environments linked to improvements in quality and safety	Aiken et al. (2008); Russell (2010); Kramer et al. (2011); McHugh et al. (2013); Krueger et al. (2013); Jayawardhana et al. (2014)
4	Magnet Recognition Program® can lead to a reduction in healthcare costs	Russell (2010); Drenkard (2010a); Walker and Aguilera (2013); Jayawardhana et al. (2014); Lundmark (2014)

Challenges		
1	Resource intensive	Kuhar et al. (2004); Armstrong (2005); Pinkerton (2005); Russell (2010); Drenkard (2010a); Higdon et al. (2013) Jayawardhana et al. (2014)
2	No significant difference in work environments	Kelly et al. (2012)
3	No significant difference in patient's outcomes	Mills and Gillespie (2013)
Opportunities		
1	Internationalisation of the Magnet Recognition Program®	Aiken et al. (2008); Walker and Aguilera (2013); Heitmann et al. (2013)
2	Additional research into the Magnet Recognition Program® and work environments	Kelly et al. (2012); Mills and Gillespie (2013)
3	Additional research into the Magnet Recognition Program® by non-nursing scholars	Sanders and Davey (2010)

Table D3 – Classification of Articles and Studies Related to the Magnet Recognition Program®

There were 23 articles included in the Magnet Recognition Program® literature review

1	Conceptual/theoretical / descriptive (9)	Kuhar et al. (2004); Armstrong (2005); Pinkerton (2005); Sanders and Davey (2010); Russell (2010); Drenkard (2010a); Jenkins and Jarrett-Pulliam (2012); Lundmark (2014); Wolf, Finlayson, Hayden, Hoolahan, and Mazzoccoli (2014b)
2	Qualitative/evaluative (11)	Aiken et al. (2008); Kramer et al. (2011); Kelly et al. (2012); Heitmann et al. (2013); Higdon et al. (2013); Mills and Gillespie (2013); McHugh et al. (2013); Smith (2014); Jayawardhana et al. (2014); Chen et al. (2014); Walker et al. (2014)
3	Literature Review (1)	Krueger et al. (2013)
4	Mixed method review (1)	Joyce and Crookes (2007)
5	Organisational case study (1)	Walker and Aguilera (2013)

Appendix E – Findings from the Literature on Revenue Cycle Management

As detailed in Table E1 and Table E2, the literature review on revenue cycle management revealed four main benefits; two challenges and two opportunities for the successful implementation of this program.

Table E1 – Literature Review: Revenue Cycle Management (RCM). Concept Matrix.

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
1	Mallipeddi (2010)	Where revenue-cycle management goes wrong. Increased profits, streamlined operations and a strengthened financial position are all benefits of the right type of revenue cycle management implementation.	Health management technology	31(4) : 24-25.	Conceptual, descriptive	An effective revenue cycle management creates opportunities for increase profits, streamline operations and the financial position of the organisation.	The revenue cycle management system should provide excellent reporting capability, a sophisticated configurable payer system and ease of use and fast data entry capability.	Examines the implication of improved revenue flows following the implementation of a successful revenue cycle management in a mid-size practice	Alerts heathlcare facilities to the benefits and pitfalls of implementing a revenue cycle management.
2	Degen (2010)	Revenue cycle management "best practices"	Podiatry Management	29(4) : 113.	Conceptual, descriptive	Healthcare providers are so focused on patient care that the 'health' of	Revenue cycle management business processes require constant evaluation and re-evaluation on a	Describes seven steps in the revenue cycle management that are critical for safeguarding the	Proposes a number of questions that are important within the seven steps in the

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
		These seven steps will help your practice become more efficient.				the business is often neglected.	regular basis in order to reduce inefficiencies.	revenue base of the organisation.	revenue cycle management program.
3	Edwards et al. (2011)	Achieving efficiency: Lessons from four top-performing hospitals	The Commonwealth Fund	15: 1-22.	Quantitative, evaluative Organisational case study	Improve quality and access, and efficiency will improve.	Standardise and simplify processes to eliminate redundancies.	Integrate care, systems and providers, either explicitly or by sharing a common information system.	Sharing best practices and quality improvement initiatives across the healthcare sector.
6	Terrell (2013)	Refusing our default future: organizations that are accountable for care can lower costs and improve quality.	North Carolina Medical Journal	74(4): 334-337.	Conceptual, descriptive	Current rate of healthcare spending is unsustainable in the US and many other countries around the world.	Fee-for-service (FFS) is based on volume-based payment and there is a shift to a 'value-based' payment model, focusing on outcomes of care.	Examines how Accountable Care Organisations (ACO) is a step toward achieving a sustainable and accountable health system.	Suggests that the default future of the US healthcare system is not pretty and healthcare payment and delivery needs transformation.
7	Colpas (2013)	How automation helps steer the revenue cycle process.	Health management technology	34(6): 8-11.	Conceptual, descriptive	Automation in IT and business intelligence systems may assist in driving the revenue cycle management program.	Healthcare reform is increasing he complexity for the effective implementation of revenue cycle management programs.	The author interviews there healthcare leaders to suggest improvements with the implementation of revenue cycle management programs.	Sharing of best practices to assist organisations with the implementation of effective revenue cycle management programs.

Article No	Author	Title	Source	Page No	Method	Argument	Issues	Approach	Contribution to Field
8	HFMA (2014)	25 tips for revenue cycle success: ideas and inspiration from HFMA's MAP Award winners.	Healthcare Financial Management	110-117.	Conceptual, descriptive	Revenue cycle management is difficult for even the most driven organisations.	Payment pressures; Complex regulatory environment; Shifting technologies; and demands to improve customer service.	The HFMA highlights the 2014 award winners for high performance in revenue cycle management.	Provides 25 tips for revenue cycle management success that requires consideration by healthcare facilities.

Table E2 – Main Themes and Concepts Related to Revenue Cycle Management

Benefits		
1	Improve healthcare facility financial performance	Mallipeddi (2010); Degen (2010); Rauscher Singh and Wheeler (2012); Mathur and Lorusso (2012); Terrell (2013); Colpas (2013); HFMA (2014)
2	Reduction in healthcare costs	Mallipeddi (2010); Degen (2010); Rauscher Singh and Wheeler (2012); Mathur and Lorusso (2012); Terrell (2013); Colpas (2013); HFMA (2014)
3	Build capital and long-term sustainability	Rauscher Singh and Wheeler (2012)
4	Improve access, patient care and satisfaction	Edwards et al. (2011); Terrell (2013)
Challenges		
1	Complexity of the health insurance negotiation environment	Mallipeddi (2010); Degen (2010); Rauscher Singh and Wheeler (2012); Mathur and Lorusso (2012); Terrell (2013); Colpas (2013)
2	Lack of sophisticated business intelligence (BI) and information technology (IT) systems	Mallipeddi (2010); Degen (2010); Mathur and Lorusso (2012); Colpas (2013)
Opportunities		
1	Strengthen IT and BI systems to support operations	Mallipeddi (2010); Edwards et al. (2011); Colpas (2013)
2	Improve patient quality of care and satisfaction	Edwards et al. (2011); Terrell (2013)

Table E3 – Classification of Articles and Studies related to Revenue Cycle Management

There were eight articles included in the revenue cycle management literature review

1	Conceptual / theoretical / descriptive (6)	Mallipeddi (2010); Degen (2010); Mathur and Lorusso (2012); Terrell (2013); Colpas (2013); HFMA (2014)
2	Qualitative / evaluative, organisational case study(1)	Edwards et al. (2011)
3	Quantitative Review (1)	Rauscher Singh and Wheeler (2012)

Appendix F – Sensitivity Analysis

Table F1 – Sensitivity Analysis: Net Present Value (NPV) and Internal Rate of Return (IRR) and 2% discount rate

Net Present Value (NPV) and Internal Rate of Return (IRR) - BSC, MRP & RCM: 2005 -2015

Undiscounted Flows	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Net base rate	-$65,848	-$22,084	$2,746,228	$2,828,615	$2,858,348	$2,944,822	$4,992,460	$5,215,182	$5,371,638	$5,532,787	$6,753,205
Net -1%	-$65,190	-$21,863	$2,718,765	$2,800,328	$2,829,765	$2,915,374	$4,942,536	$5,163,030	$5,317,921	$5,477,459	$6,685,673
Net -5%	-$62,556	-$20,980	$2,608,916	$2,687,184	$2,715,431	$2,797,581	$4,742,837	$4,954,423	$5,103,056	$5,256,147	$6,415,544
Net -10%	-$59,263	-$19,876	$2,471,605	$2,545,753	$2,572,513	$2,650,340	$4,493,214	$4,693,664	$4,834,474	$4,979,508	$6,077,884
Net -20%	-$52,678	-$17,667	$2,196,982	$2,262,892	$2,286,678	$2,355,858	$3,993,968	$4,172,146	$4,297,310	$4,426,229	$5,402,564
Net -30%	-$46,094	-$15,459	$1,922,359	$1,980,030	$2,000,844	$2,061,376	$3,494,722	$3,650,628	$3,760,146	$3,872,951	$4,727,243
Net 1%	-$66,506	-$22,305	$2,773,690	$2,856,901	$2,886,931	$2,974,271	$5,042,385	$5,267,334	$5,425,354	$5,588,115	$6,820,737
Net 5%	-$69,140	-$23,188	$2,883,539	$2,970,045	$3,001,265	$3,092,064	$5,242,083	$5,475,941	$5,640,220	$5,809,426	$7,090,865
Net 10%	-$72,433	-$24,293	$3,020,851	$3,111,476	$3,144,183	$3,239,305	$5,491,706	$5,736,700	$5,908,801	$6,086,065	$7,428,525
Net 20%	-$79,018	-$26,501	$3,295,473	$3,394,337	$3,430,018	$3,533,787	$5,990,952	$6,258,219	$6,445,965	$6,639,344	$8,103,846
Net 30%	-$85,602	-$28,709	$3,570,096	$3,677,199	$3,715,852	$3,828,269	$6,490,198	$6,779,737	$6,983,129	$7,192,623	$8,779,166

Discounted Factors											
Discount Rate	**-2%**										
Base rate	**2005**										
Year Index	0	1	2	3	4	5	6	7	8	9	10
Discount Factor	1.0000	1.0204	1.0412	1.0625	1.0842	1.1063	1.1289	1.1519	1.1754	1.1994	1.2239

Discounted Flows											
Net base rate	-65,848	-22,535	2,859,462	3,005,353	3,098,923	3,257,832	5,635,834	6,007,406	6,313,906	6,636,044	**8,265,120**
Cummulative	-65,848	-88,383	2,771,080	5,776,433	8,875,356	12,133,188	17,769,022	23,776,428	30,090,333	36,726,377	**44,991,497**
Net -1%	-65,848	-22,310	2,830,868	2,975,300	3,067,934	3,225,254	5,579,475	5,947,332	6,250,767	6,569,684	**8,182,469**
Cummulative	-65,848	-88,158	2,742,710	5,718,010	8,785,944	12,011,198	17,590,673	23,538,005	29,788,772	36,358,455	**44,540,924**
Net -5%	-65,848	-21,408	2,716,489	2,855,086	2,943,977	3,094,941	5,354,042	5,707,035	5,998,211	6,304,242	**7,851,864**
Cummulative	-65,848	-87,256	2,629,233	5,484,319	8,428,296	11,523,237	16,877,278	22,584,314	28,582,524	34,886,766	**42,738,630**
Net -10%	-65,848	-20,281	2,573,516	2,704,818	2,789,031	2,932,049	5,072,250	5,406,665	5,682,515	5,972,440	**7,438,608**
Cummulative	-65,848	-86,129	2,487,387	5,192,205	7,981,236	10,913,285	15,985,535	21,392,200	27,074,715	33,047,155	**40,485,763**
Net -20%	-65,848	-18,028	2,287,570	2,404,283	2,479,138	2,606,266	4,508,667	4,805,925	5,051,125	5,308,835	**6,612,096**
Cummulative	-65,848	-83,876	2,203,694	4,607,977	7,087,115	9,693,381	14,202,048	19,007,972	24,059,097	29,367,932	**35,980,028**
Net -30%	-65,848	-15,774	2,001,624	2,103,747	2,169,246	2,280,483	3,945,083	4,205,184	4,419,734	4,645,231	**5,785,584**
Cummulative	-65,848	-81,622	1,920,001	4,023,749	6,192,995	8,473,477	12,418,561	16,623,745	21,043,479	25,688,710	**31,474,294**
Net 1%	-65,848	-22,760	2,888,057	3,035,407	3,129,912	3,290,411	5,692,192	6,067,480	6,377,045	6,702,404	**8,347,771**
Cummulative	-65,848	-88,608	2,799,449	5,834,856	8,964,768	12,255,179	17,947,371	24,014,850	30,391,895	37,094,300	**45,442,071**
Net 5%	-65,848	-23,662	3,002,436	3,155,621	3,253,869	3,420,724	5,917,625	6,307,776	6,629,601	6,967,846	**8,678,376**
Cummulative	-65,848	-89,510	2,912,926	6,068,547	9,322,416	12,743,140	18,660,765	24,968,541	31,598,143	38,565,989	**47,244,365**
Net 10%	-65,848	-24,788	3,145,409	3,305,889	3,408,815	3,583,616	6,199,417	6,608,146	6,945,297	7,299,648	**9,091,632**
Cummulative	-65,848	-90,636	3,054,772	6,360,661	9,769,476	13,353,092	19,552,509	26,160,655	33,105,952	40,405,600	**49,497,232**
Net 20%	-65,848	-27,042	3,431,355	3,606,424	3,718,708	3,909,399	6,763,000	7,208,887	7,576,687	7,963,253	**9,918,144**
Cummulative	-65,848	-92,890	3,338,465	6,944,889	10,663,597	14,572,996	21,335,996	28,544,883	36,121,570	44,084,823	**54,002,966**
Net 30%	-65,848	-29,295	3,717,301	3,906,959	4,028,600	4,235,182	7,326,584	7,809,627	8,208,078	8,626,857	**10,744,656**
Cummulative	-$65,848	-$95,143	$3,622,158	$7,529,117	$11,557,717	$15,792,899	$23,119,483	$30,929,110	$39,137,188	$47,764,045	**$58,508,701**

	Base Rate	**-1%**	**-5%**	**-10%**	**-20%**	**-30%**	**1%**	**5%**	**10%**	**20%**	**30%**
Net Present Value	**$44,991,497**	**$44,541,582**	**$42,741,922**	**$40,492,348**	**$35,993,198**	**$31,494,048**	**$45,441,412**	**$47,241,072**	**$49,490,647**	**$53,989,797**	**$58,488,947**
Internal Rate of Return	584%	584%	584%	584%	584%	584%	584%	584%	584%	584%	584%

Table F2 – Sensitivity Analysis: Net Present Value (NPV) and Internal Rate of Return (IRR) and –5% discount rate

Net Present Value (NPV) and Internal Rate of Return (IRR) - BSC, MRP & RCM: 2005 -2015

Undiscounted Flows	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Net base rate	-$65,848	-$22,084	$2,746,228	$2,828,615	$2,858,348	$2,944,822	$4,992,460	$5,215,182	$5,371,638	$5,532,787	$6,753,205
Net -1%	-$65,190	-$21,863	$2,718,765	$2,800,328	$2,829,765	$2,915,374	$4,942,536	$5,163,030	$5,317,921	$5,477,459	$6,685,673
Net -5%	-$62,556	-$20,980	$2,608,916	$2,687,184	$2,715,431	$2,797,581	$4,742,837	$4,954,423	$5,103,056	$5,256,147	$6,415,544
Net -10%	-$59,263	-$19,876	$2,471,605	$2,545,753	$2,572,513	$2,650,340	$4,493,214	$4,693,664	$4,834,474	$4,979,508	$6,077,884
Net -20%	-$52,678	-$17,667	$2,196,982	$2,262,892	$2,286,678	$2,355,858	$3,993,968	$4,172,146	$4,297,310	$4,426,229	$5,402,564
Net -30%	-$46,094	-$15,459	$1,922,359	$1,980,030	$2,000,844	$2,061,376	$3,494,722	$3,650,628	$3,760,146	$3,872,951	$4,727,243
Net 1%	-$66,506	-$22,305	$2,773,690	$2,856,901	$2,886,931	$2,974,271	$5,042,385	$5,267,334	$5,425,354	$5,588,115	$6,820,737
Net 5%	-$69,140	-$23,188	$2,883,539	$2,970,045	$3,001,265	$3,092,064	$5,242,083	$5,475,941	$5,640,220	$5,809,426	$7,090,865
Net 10%	-$72,433	-$24,293	$3,020,851	$3,111,476	$3,144,183	$3,239,305	$5,491,706	$5,736,700	$5,908,801	$6,086,065	$7,428,525
Net 20%	-$79,018	-$26,501	$3,295,473	$3,394,337	$3,430,018	$3,533,787	$5,990,952	$6,258,219	$6,445,965	$6,639,344	$8,103,846
Net 30%	-$85,602	-$28,709	$3,570,096	$3,677,199	$3,715,852	$3,828,269	$6,490,198	$6,779,737	$6,983,129	$7,192,623	$8,779,166

Discounted Factors											
Discount Rate	**-5%**										
Base rate	**2005**										
Year Index	0	1	2	3	4	5	6	7	8	9	10
Discount Factor	1.0000	1.0526	1.1080	1.1664	1.2277	1.2924	1.3604	1.4320	1.5073	1.5867	1.6702

Discounted Flows											
Net base rate	-65,848	-23,247	3,042,912	3,299,157	3,509,302	3,805,757	6,791,614	7,467,999	8,096,883	8,778,726	**11,279,085**
Cummulative	-65,848	-89,095	2,953,817	6,252,974	9,762,275	13,568,033	20,359,646	27,827,645	35,924,529	44,703,254	**55,982,339**
Net -1%	-65,848	-23,014	3,012,483	3,266,165	3,474,208	3,767,700	6,723,698	7,393,319	8,015,914	8,690,939	**11,166,294**
Cummulative	-65,848	-88,862	2,923,620	6,189,786	9,663,994	13,431,694	20,155,391	27,548,710	35,564,625	44,255,563	**55,421,857**
Net -5%	-65,848	-22,084	2,890,766	3,134,199	3,333,836	3,615,469	6,452,033	7,094,599	7,692,039	8,339,790	**10,715,131**
Cummulative	-65,848	-87,932	2,802,834	5,937,033	9,270,869	12,886,339	19,338,372	26,432,971	34,125,010	42,464,799	**53,179,930**
Net -10%	-65,848	-20,922	2,738,620	2,969,241	3,158,371	3,425,182	6,112,452	6,721,199	7,287,195	7,900,853	**10,151,176**
Cummulative	-65,848	-86,770	2,651,851	5,621,092	8,779,463	12,204,645	18,317,097	25,038,296	32,325,491	40,226,344	**50,377,520**
Net -20%	-65,848	-18,597	2,434,329	2,639,325	2,807,441	3,044,606	5,433,291	5,974,399	6,477,506	7,022,981	**9,023,268**
Cummulative	-65,848	-84,445	2,349,884	4,989,210	7,796,651	10,841,257	16,274,548	22,248,947	28,726,453	35,749,434	**44,772,702**
Net -30%	-65,848	-16,273	2,130,038	2,309,410	2,456,511	2,664,030	4,754,130	5,227,599	5,667,818	6,145,108	**7,895,359**
Cummulative	-65,848	-82,121	2,047,918	4,357,327	6,813,838	9,477,868	14,231,998	19,459,597	25,127,416	31,272,524	**39,167,883**
Net 1%	-65,848	-23,479	3,073,341	3,332,148	3,544,395	3,843,815	6,859,530	7,542,679	8,177,852	8,866,513	**11,391,876**
Cummulative	-65,848	-89,327	2,984,014	6,316,162	9,860,557	13,704,371	20,563,901	28,106,580	36,284,432	45,150,945	**56,542,821**
Net 5%	-65,848	-24,409	3,195,057	3,464,115	3,684,767	3,996,045	7,131,194	7,841,399	8,501,727	9,217,662	**11,843,039**
Cummulative	-65,848	-90,257	3,104,800	6,568,915	10,253,682	14,249,727	21,380,921	29,222,320	37,724,047	46,941,710	**58,784,749**
Net 10%	-65,848	-25,571	3,347,203	3,629,072	3,860,232	4,186,333	7,470,775	8,214,799	8,906,571	9,656,598	**12,406,993**
Cummulative	-65,848	-91,419	3,255,784	6,884,856	10,745,088	14,931,421	22,402,196	30,616,995	39,523,566	49,180,165	**61,587,158**
Net 20%	-65,848	-27,896	3,651,494	3,958,988	4,211,162	4,566,909	8,149,937	8,961,599	9,716,260	10,534,471	**13,534,902**
Cummulative	-65,848	-93,744	3,557,750	7,516,738	11,727,900	16,294,809	24,444,745	33,406,344	43,122,604	53,657,075	**67,191,977**
Net 30%	-65,848	-30,221	3,955,785	4,288,904	4,562,092	4,947,484	8,829,098	9,708,399	10,525,948	11,412,344	**14,662,810**
Cummulative	-65,848	-$96,069	$3,859,717	$8,148,620	$12,710,712	$17,658,197	$26,487,295	$36,195,693	$46,721,641	$58,133,985	**$72,796,795**

	Base Rate	**-1%**	**-5%**	**-10%**	**-20%**	**-30%**	**1%**	**5%**	**10%**	**20%**	**30%**
Net Present Value	**$55,982,339**	**$55,422,516**	**$53,183,222**	**$50,384,105**	**$44,785,871**	**$39,187,637**	**$56,542,163**	**$58,781,456**	**$61,580,573**	**$67,178,807**	**$72,777,041**
Internal Rate of Return	584%	584%	584%	584%	584%	584%	584%	584%	584%	584%	584%

Table F3 – Sensitivity Analysis: Net Present Value (NPV) and Internal Rate of Return (IRR) and 2% discount rate

Net Present Value (NPV) and Internal Rate of Return (IRR) - BSC, MRP & RCM: 2005 -2015

Undiscounted Flows	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Net base rate	-$65,848	-$22,084	$2,746,228	$2,828,615	$2,858,348	$2,944,822	$4,992,460	$5,215,182	$5,371,638	$5,532,787	$6,753,205
Net -1%	-$65,190	-$21,863	$2,718,765	$2,800,328	$2,829,765	$2,915,374	$4,942,536	$5,163,030	$5,317,921	$5,477,459	$6,685,673
Net -5%	-$62,556	-$20,980	$2,608,916	$2,687,184	$2,715,431	$2,797,581	$4,742,837	$4,954,423	$5,103,056	$5,256,147	$6,415,544
Net -10%	-$59,263	-$19,876	$2,471,605	$2,545,753	$2,572,513	$2,650,340	$4,493,214	$4,693,664	$4,834,474	$4,979,508	$6,077,884
Net -20%	-$52,678	-$17,667	$2,196,982	$2,262,892	$2,286,678	$2,355,858	$3,993,968	$4,172,146	$4,297,310	$4,426,229	$5,402,564
Net -30%	-$46,094	-$15,459	$1,922,359	$1,980,030	$2,000,844	$2,061,376	$3,494,722	$3,650,628	$3,760,146	$3,872,951	$4,727,243
Net 1%	-$66,506	-$22,305	$2,773,690	$2,856,901	$2,886,931	$2,974,271	$5,042,385	$5,267,334	$5,425,354	$5,588,115	$6,820,737
Net 5%	-$69,140	-$23,188	$2,883,539	$2,970,045	$3,001,265	$3,092,064	$5,242,083	$5,475,941	$5,640,220	$5,809,426	$7,090,865
Net 10%	-$72,433	-$24,293	$3,020,851	$3,111,476	$3,144,183	$3,239,305	$5,491,706	$5,736,700	$5,908,801	$6,086,065	$7,428,525
Net 20%	-$79,018	-$26,501	$3,295,473	$3,394,337	$3,430,018	$3,533,787	$5,990,952	$6,258,219	$6,445,965	$6,639,344	$8,103,846
Net 30%	-$85,602	-$28,709	$3,570,096	$3,677,199	$3,715,852	$3,828,269	$6,490,198	$6,779,737	$6,983,129	$7,192,623	$8,779,166

Discounted Factors											
Discount Rate	**2%**										
Base rate	**2005**										
Year Index	0	1	2	3	4	5	6	7	8	9	10
Discount Factor	1.0000	0.9804	0.9612	0.9423	0.9238	0.9057	0.8880	0.8706	0.8535	0.8368	0.8203

Discounted Flows											
Net base rate	-65,848	-21,651	2,639,588	2,665,467	2,640,672	2,667,216	4,433,162	4,540,130	4,584,641	4,629,589	**5,539,980**
Cummulative	-65,848	-87,499	2,552,089	5,217,556	7,858,228	10,525,444	14,958,606	19,498,736	24,083,377	28,712,965	**34,252,945**
Net -1%	-65,848	-21,435	2,613,192	2,638,812	2,614,265	2,640,544	4,388,830	4,494,729	4,538,795	4,583,293	**5,484,580**
Cummulative	-65,848	-87,283	2,525,910	5,164,722	7,778,987	10,419,531	14,808,361	19,303,090	23,841,885	28,425,177	**33,909,757**
Net -5%	-65,848	-20,569	2,507,609	2,532,193	2,508,638	2,533,856	4,211,504	4,313,123	4,355,409	4,398,109	**5,262,981**
Cummulative	-65,848	-86,417	2,421,192	4,953,386	7,462,024	9,995,879	14,207,383	18,520,507	22,875,916	27,274,025	**32,537,006**
Net -10%	-65,848	-19,486	2,375,630	2,398,920	2,376,605	2,400,495	3,989,846	4,086,117	4,126,177	4,166,630	**4,985,982**
Cummulative	-65,848	-85,334	2,290,295	4,689,215	7,065,820	9,466,315	13,456,160	17,542,277	21,668,454	25,835,084	**30,821,066**
Net -20%	-65,848	-17,321	2,111,671	2,132,373	2,112,537	2,133,773	3,546,529	3,632,104	3,667,713	3,703,671	**4,431,984**
Cummulative	-65,848	-83,169	2,028,502	4,160,875	6,273,412	8,407,186	11,953,715	15,585,819	19,253,532	22,957,203	**27,389,187**
Net -30%	-65,848	-15,156	1,847,712	1,865,827	1,848,470	1,867,051	3,103,213	3,178,091	3,209,249	3,240,712	**3,877,986**
Cummulative	-65,848	-81,004	1,766,708	3,632,535	5,481,005	7,348,056	10,451,270	13,629,361	16,838,609	20,079,321	**23,957,307**
Net 1%	-65,848	-21,868	2,665,984	2,692,121	2,667,078	2,693,889	4,477,493	4,585,531	4,630,487	4,675,884	**5,595,380**
Cummulative	-65,848	-87,716	2,578,269	5,270,390	7,937,468	10,631,357	15,108,850	19,694,382	24,324,869	29,000,753	**34,596,133**
Net 5%	-65,848	-22,734	2,771,568	2,798,740	2,772,705	2,800,577	4,654,820	4,767,136	4,813,873	4,861,068	**5,816,979**
Cummulative	-65,848	-88,582	2,682,986	5,481,726	8,254,431	11,055,009	15,709,828	20,476,965	25,290,838	30,151,906	**35,968,885**
Net 10%	-65,848	-23,816	2,903,547	2,932,013	2,904,739	2,933,938	4,876,478	4,994,143	5,043,105	5,092,547	**6,093,978**
Cummulative	-65,848	-89,664	2,813,883	5,745,896	8,650,635	11,584,573	16,461,051	21,455,194	26,498,299	31,590,847	**37,684,825**
Net 20%	-65,848	-25,981	3,167,506	3,198,560	3,168,806	3,200,660	5,319,794	5,448,156	5,501,569	5,555,506	**6,647,976**
Cummulative	-65,848	-91,829	3,075,677	6,274,237	9,443,043	12,643,702	17,963,497	23,411,652	28,913,222	34,468,728	**41,116,704**
Net 30%	-65,848	-28,147	3,431,465	3,465,107	3,432,873	3,467,381	5,763,110	5,902,169	5,960,033	6,018,465	**7,201,974**
Cummulative	-$65,848	-$93,995	$3,337,470	$6,802,577	$10,235,450	$13,702,832	$19,465,942	$25,368,111	$31,328,144	$37,346,609	**$44,548,583**

	Base Rate	**-1%**	**-5%**	**-10%**	**-20%**	**-30%**	**1%**	**5%**	**10%**	**20%**	**30%**
Net Present Value	**$34,252,945**	**$33,910,416**	**$32,540,298**	**$30,827,651**	**$27,402,356**	**$23,977,062**	**$34,595,475**	**$35,965,593**	**$37,678,240**	**$41,103,534**	**$44,528,829**
Internal Rate of Return	584%	584%	584%	584%	584%	584%	584%	584%	584%	584%	584%

Table F4 – Sensitivity Analysis: Net Present Value (NPV) and Internal Rate of Return (IRR) and 5% discount rate

Net Present Value (NPV) and Internal Rate of Return (IRR) - BSC, MRP & RCM: 2005 -2015

Undiscounted Flows	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Net base rate	-$65,848	-$22,084	$2,746,228	$2,828,615	$2,858,348	$2,944,822	$4,992,460	$5,215,182	$5,371,638	$5,532,787	$6,753,205
Net -1%	-$65,190	-$21,863	$2,718,765	$2,800,328	$2,829,765	$2,915,374	$4,942,536	$5,163,030	$5,317,921	$5,477,459	$6,685,673
Net -5%	-$62,556	-$20,980	$2,608,916	$2,687,184	$2,715,431	$2,797,581	$4,742,837	$4,954,423	$5,103,056	$5,256,147	$6,415,544
Net -10%	-$59,263	-$19,876	$2,471,605	$2,545,753	$2,572,513	$2,650,340	$4,493,214	$4,693,664	$4,834,474	$4,979,508	$6,077,884
Net -20%	-$52,678	-$17,667	$2,196,982	$2,262,892	$2,286,678	$2,355,858	$3,993,968	$4,172,146	$4,297,310	$4,426,229	$5,402,564
Net -30%	-$46,094	-$15,459	$1,922,359	$1,980,030	$2,000,844	$2,061,376	$3,494,722	$3,650,628	$3,760,146	$3,872,951	$4,727,243
Net 1%	-$66,506	-$22,305	$2,773,690	$2,856,901	$2,886,931	$2,974,271	$5,042,385	$5,267,334	$5,425,354	$5,588,115	$6,820,737
Net 5%	-$69,140	-$23,188	$2,883,539	$2,970,045	$3,001,265	$3,092,064	$5,242,083	$5,475,941	$5,640,220	$5,809,426	$7,090,865
Net 10%	-$72,433	-$24,293	$3,020,851	$3,111,476	$3,144,183	$3,239,305	$5,491,706	$5,736,700	$5,908,801	$6,086,065	$7,428,525
Net 20%	-$79,018	-$26,501	$3,295,473	$3,394,337	$3,430,018	$3,533,787	$5,990,952	$6,258,219	$6,445,965	$6,639,344	$8,103,846
Net 30%	-$85,602	-$28,709	$3,570,096	$3,677,199	$3,715,852	$3,828,269	$6,490,198	$6,779,737	$6,983,129	$7,192,623	$8,779,166

Discounted Factors											
Discount Rate	**5%**										
Base rate	**2005**										
Year Index	0	1	2	3	4	5	6	7	8	9	10
Discount Factor	1.0000	0.9524	0.9070	0.8638	0.8227	0.7835	0.7462	0.7107	0.6768	0.6446	0.6139

Discounted Flows											
Net base rate	-65,848	-21,033	2,490,910	2,443,464	2,351,570	2,307,345	3,725,451	3,706,333	3,635,736	3,566,484	**4,145,882**
Cummulative	-65,848	-86,881	2,404,029	4,847,493	7,199,063	9,506,408	13,231,859	16,938,191	20,573,927	24,140,411	**28,286,293**
Net -1%	-65,848	-20,822	2,466,000	2,419,029	2,328,054	2,284,272	3,688,196	3,669,269	3,599,378	3,530,819	**4,104,423**
Cummulative	-65,848	-86,670	2,379,330	4,798,359	7,126,413	9,410,685	13,098,882	16,768,151	20,367,529	23,898,348	**28,002,771**
Net -5%	-65,848	-19,981	2,366,364	2,321,290	2,233,991	2,191,978	3,539,178	3,521,016	3,453,949	3,388,160	**3,938,588**
Cummulative	-65,848	-85,829	2,280,535	4,601,826	6,835,817	9,027,795	12,566,973	16,087,989	19,541,938	22,930,098	**26,868,686**
Net -10%	-65,848	-18,929	2,241,819	2,199,117	2,116,413	2,076,611	3,352,906	3,335,699	3,272,162	3,209,835	**3,731,294**
Cummulative	-65,848	-84,777	2,157,041	4,356,158	6,472,571	8,549,182	11,902,088	15,237,787	18,509,950	21,719,785	**25,451,079**
Net -20%	-65,848	-16,826	1,992,728	1,954,771	1,881,256	1,845,876	2,980,361	2,965,066	2,908,589	2,853,187	**3,316,705**
Cummulative	-65,848	-82,674	1,910,054	3,864,824	5,746,080	7,591,957	10,572,317	13,537,383	16,445,972	19,299,159	**22,615,865**
Net -30%	-65,848	-14,723	1,743,637	1,710,425	1,646,099	1,615,142	2,607,815	2,594,433	2,545,015	2,496,539	**2,902,117**
Cummulative	-65,848	-80,571	1,663,066	3,373,490	5,019,589	6,634,731	9,242,547	11,836,979	14,381,995	16,878,533	**19,780,650**
Net 1%	-65,848	-21,243	2,515,819	2,467,898	2,375,086	2,330,419	3,762,705	3,743,396	3,672,093	3,602,149	**4,187,341**
Cummulative	-65,848	-87,091	2,428,728	4,896,626	7,271,712	9,602,130	13,364,836	17,108,232	20,780,325	24,382,473	**28,569,814**
Net 5%	-65,848	-22,084	2,615,455	2,565,637	2,469,148	2,422,713	3,911,723	3,891,649	3,817,523	3,744,808	**4,353,176**
Cummulative	-65,848	-87,932	2,527,523	5,093,160	7,562,308	9,985,021	13,896,744	17,788,393	21,605,916	25,350,724	**29,703,900**
Net 10%	-65,848	-23,136	2,740,000	2,687,810	2,586,727	2,538,080	4,097,996	4,076,966	3,999,309	3,923,132	**4,560,470**
Cummulative	-65,848	-88,984	2,651,017	5,338,827	7,925,554	10,463,634	14,561,629	18,638,595	22,637,905	26,561,037	**31,121,507**
Net 20%	-65,848	-25,239	2,989,091	2,932,156	2,821,884	2,768,815	4,470,541	4,447,599	4,362,883	4,279,780	**4,975,058**
Cummulative	-65,848	-91,087	2,898,004	5,830,161	8,652,045	11,420,859	15,891,400	20,338,999	24,701,882	28,981,663	**33,956,721**
Net 30%	-65,848	-27,342	3,238,182	3,176,503	3,057,041	2,999,549	4,843,086	4,818,232	4,726,457	4,636,429	**5,389,646**
Cummulative	-65,848	-$93,190	$3,144,992	$6,321,495	$9,378,536	$12,378,085	$17,221,171	$22,039,403	$26,765,860	$31,402,288	**$36,791,935**

	Base Rate	**-1%**	**-5%**	**-10%**	**-20%**	**-30%**	**1%**	**5%**	**10%**	**20%**	**30%**
Net Present Value	**$28,286,293**	**$28,003,430**	**$26,871,978**	**$25,457,663**	**$22,629,034**	**$19,800,405**	**$28,569,156**	**$29,700,607**	**$31,114,922**	**$33,943,551**	**$36,772,180**
Internal Rate of Return	584%	584%	584%	584%	584%	584%	584%	584%	584%	584%	584%

Appendix G – Practice Environment Scale Survey (PES–AUS) – (Magnet Survey 2014 results)

Subscale Mean Scores

St Vincent's Private Hospital, Sydney	2009	2012	2014	Magnet
Nurse Participation in Hospital Affairs	3.06	3.01	**3.04**	2.76
Nursing Foundations for Quality of Care	3.18	3.18	**3.22**	3.09
NUM Ability, Leadership and Support of Nurses	3.17	3.09	**3.05**	3.00
Staffing and Resource Adequacy	2.88	2.88	**2.90**	2.88
Collegial Nurse-Doctor Relations	3.01	3.05	**3.08**	2.99
Composite Scale	3.06	3.04	**3.06**	2.95

Appendix H – Ethics Approval

Social Science Ethics Officer
Private Bag 01 Hobart
Tasmania 7001 Australia
Tel: (03) 6226 2763
Fax: (03) 6226 7148
Katherine.Shaw@utas.edu.au

HUMAN RESEARCH ETHICS COMMITTEE (TASMANIA) NETWORK

29 April 2015

Professor Walker
St Vincents Hospital

Sent Via Email

Dear Professor Walker

Re: MINIMAL RISK ETHICS APPLICATION APPROVAL
Ethics Ref: H0014885 - Exploring the impact of the Balanced Scorecard the Magnet Recognition Program and Revenue Cycle Management programs in SVPHS pursuit of an accountable and sustainable Patient Centred Care Model

We are pleased to advise that acting on a mandate from the Tasmania Social Sciences HREC, the Chair of the committee considered and approved the above project on 29 April 2015.

This approval constitutes ethical clearance by the Tasmania Social Sciences Human Research Ethics Committee. The decision and authority to commence the associated research may be dependent on factors beyond the remit of the ethics review process. For example, your research may need ethics clearance from other organisations or review by your research governance coordinator or Head of Department. It is your responsibility to find out if the approval of other bodies or authorities is required. It is recommended that the proposed research should not commence until you have satisfied these requirements.

Please note that this approval is for four years and is conditional upon receipt of an annual Progress Report. Ethics approval for this project will lapse if a Progress Report is not submitted.

The following conditions apply to this approval. Failure to abide by these conditions may result in suspension or discontinuation of approval.

1. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval, to ensure the project is conducted as approved by the Ethics Committee, and to notify the Committee if any investigators are added to, or cease involvement with, the project.

A PARTNERSHIP PROGRAM IN CONJUNCTION WITH THE DEPARTMENT OF HEALTH AND HUMAN SERVICES

2. Complaints: If any complaints are received or ethical issues arise during the course of the project, investigators should advise the Executive Officer of the Ethics Committee on 03 6226 7479 or human.ethics@utas.edu.au.

3. Incidents or adverse effects: Investigators should notify the Ethics Committee immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.

4. Amendments to Project: Modifications to the project must not proceed until approval is obtained from the Ethics Committee. Please submit an Amendment Form (available on our website) to notify the Ethics Committee of the proposed modifications.

5. Annual Report: Continued approval for this project is dependent on the submission of a Progress Report by the anniversary date of your approval. You will be sent a courtesy reminder closer to this date. Failure to submit a Progress Report will mean that ethics approval for this project will lapse.

6. Final Report: A Final Report and a copy of any published material arising from the project, either in full or abstract, must be provided at the end of the project.

Yours sincerely

Natasha Jones
Ethics Officer
Tasmania Social Sciences HREC

ST VINCENT'S PRIVATE HOSPITAL
SYDNEY
CONDUCTED BY THE SISTERS OF CHARITY OF AUSTRALIA

MAGNET RECOGNIZED
AMERICAN NURSES CREDENTIALING CENTER

26th May 2015

Adjunct Professor Jose Aguilera
Director of Nursing and Clinical Services
St Vincent's Private Hospital Sydney

Dear Jose,

Re: Project R 55

I write to inform you that your protocol entitled *Exploring the impact of the Balanced Scorecard, Magnet Recognition Program and revenue cycle management on the pursuit of an accountable and sustainable patient centred care model* has been defined as 'low risk' and is therefore exempt from full HREC review and has been approved by the SVPH Practice Development & Research Council.

On completion of the study could you please forward to my office a copy of the final report/draft manuscript for publication for our files please?

Kind regards.

Professor Kim Walker RN, PhD
Professor of Healthcare Improvement

On behalf of.

Appendix I – Research Project Information Poster

RESEARCH PROJECT

Exploring the impact of the Balanced Scorecard; the Magnet Recognition Program®; and Revenue Cycle Management programs in SVPHS' pursuit of an accountable and sustainable patient-centred care Model.

If you work in St. Vincent's Private Hospital, you are invited to share your thoughts on how the above programs impact on SVPHS delivering patient-centred care.

Participation in the interviews is voluntary.

All information will remain confidential.

Ethics Approval has been provided by the Tasmanian Social Sciences Human Research Ethics Committee and SVPHS Practice Development & Research Council.

If you are interested, please contact Professor Kim Walker, through email (Kim.Walker@svha.org.au) or 83824831

Appendix J – Research Information Letter

11 June 2015

Dear Colleagues,

I am currently undertaking my Doctor of Health through the University of Tasmania. I have chosen to explore the impact of the Balanced Scorecard; the Magnet Recognition Program®; and Revenue Cycle Management programs in SVPHS' pursuit of an accountable and sustainable patient-centred care Model.

I would be grateful if you would agree to participate in either an interview or a focus group to share your thoughts on how the above programs impact on SVPHS delivering patient-centred care. These sessions will be approximately 1 hour in length and will be held at SVPHS by Ms Caroline Yeh, research assistant.

Attached to this email is an information and consent form. Please read through the information sheet and if you have any questions at all regarding this research project, please do not hesitate to contact Professor Kim Walker.

If you would like to participate, please email Professor Kim Walker at Kim.Walker@svha.org.au or phone him on (02) 8382 4831.

All information obtained will remain confidential. I appreciate your time and assistance.

Yours sincerely,

Adjunct Professor Jose Aguilera

Director of Nursing and Clinical Services

St Vincent's Private Hospital, Sydney

Appendix K – Research Participant Information Sheet

PARTICIPANT INFORMATION SHEET Version 2, 11/6/2015

Exploring the impact of the Balanced Scorecard; the Magnet Recognition Program® ® and Revenue Cycle Management programs in SVPHS' pursuit of an accountable and sustainable patient-centred care model.

Dear Participant,

This study is being conducted by Jose Aguilera in partial fulfilment of the Doctor of Health Program at the University of Tasmania. Professor Kim Walker is my primary supervisor and Professor Steven Campbell and Dr Jed Duff are my co-supervisors. If you have any queries regarding the research, please contact Professor Walker by phone on (02) 8382 4831 or email at **Kim.Walker@svha.org.au**; Dr Duff can be contact by email at **Jed.Duff@svha.org.au** or phone (02) 83824832; and Professor Steve Campbell by email at **Steven.Campbell@utas.edu.au** or phone +61 3 63243741.

The aim of this study is to evaluate the effectiveness of the Balanced Scorecard; the Magnet Recognition Program® and our Revenue Cycle Management program and formulate a blue-print for healthcare organisations striving to achieve an accountable and sustainable patient-centred care model.

I would be grateful if you would agree to participate in either an interview or a focus group to share your thoughts on how the above programs impact on SVPHS delivering patient-centred

care. These sessions will be approximately 1 hour in length and will be held at SVPHS by Ms Caroline Yeh, research assistant.

The interviewer/facilitator will be audiotaping the interview/focus group for future analysis. Your participation is voluntary and you will have the option of reviewing the recording for accuracy. You will not be compensated for your participation.

Prior to the interview/focus group, you will be asked to sign a consent form. You may withdraw from the study during or after the interview/focus group without affecting your relationship with the hospital. Information collected during the interview/focus group will remain confidential. Data collected will be stored securely at the University's School of Health Sciences for a five year period. After this period, all transcripts and field notes will be shredded, computer files deleted and raw audio deleted. Only my supervisors and I will have access to data collected.

The Tasmanian Social Sciences Human Research Ethics Committee has approved this research study and no risks have been identified.

I thank you for your consideration.

Yours sincerely,

Adjunct Professor Jose Aguilera

Director of Nursing and Clinical Services

St Vincent's Private Hospital, Sydney

This study has been approved by the Tasmanian Social Sciences Human Research Ethics Committee. If you have concerns or complaints about the conduct of this study, please contact the Executive Officer of the HREC (Tasmania) Network on (03) 6226 6254 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. Please quote ethics reference number H00014885

Appendix L – Interview and Focus Groups Schedule

Interview and Focus Groups Schedule

An important consideration in formulating the interviewing/facilitation questions was that there was an opportunity for the participant to express their ideas and perspectives and that the researcher is open to unanticipated information from which new discoveries may arise. For this reason a semi-structured style of interview and focus groups have been chosen. Only six (6) guiding questions will be used in each interview/focus groups to ensure that a consistent approach is utilised with all participants.

What frameworks (processes and systems) do you know of that are used at SVPHS to assists with patient care delivery?

The Balanced Scorecard (BSC) is one of these frameworks (processes and systems). What is your understanding of it and how it impacts on your practice?

The Magnet Recognition Program® (MRP) is another of these frameworks (processes and systems). What value, if any, this program adds to your delivery of patient care?

What is your understanding of patient-centred care (patient-centred care)?

Revenue Cycle Management (RCM) is the newest framework (processes and systems) introduced at SVPHS. What is your understanding of it and how it impacts on your practice?

How has the Balanced Scorecard (BSC); the Magnet Recognition Program® (MRP) and the Revenue Cycle Management (RCM) programs assisted SVPHS in its pursuit of an accountable and sustainable patient-centred care (patient-centred care) Model?

Between these questions the interviewer/facilitator speaks only in relation to the nature of the responses from the participants. Some further questions may be required to seek clarification, some may be needed to draw out detail or examine complexities in the participant's answers.

Appendix M – Informed Consent Form

Exploring the impact of the Balanced Scorecard; the Magnet Recognition Program®; and Revenue Cycle Management programs in SVPHS' pursuit of an accountable and sustainable patient-centred care model.

Informed Consent Form

I have read and understood the Information Sheet about this project and any questions I had have been answered to my satisfaction.

I am aware that interviews and focus groups conducted will be tape-recorded for analysis

I understand that I may withdraw from participating in the project at any time without prejudice

I understand that all information gathered by the researcher will be treated as strictly confidential.

I understand that prior to the commencement of the interview, I will provide an alias to ensure that the risk of participant identification is minimised.

I agree that any research data gathered for the study may be published provided my name or other identifying information is not disclosed.

I understand that once signed and returned, this consent form will be retained by the researcher.

Participant's Signature		Date	

Researcher's Signature		Date	

Researcher's Full Name: Jose Aguilera

This study has been approved by the Tasmanian Social Sciences Human Research Ethics Committee. If you have concerns or complaints about the conduct of this study, please contact the Executive Officer of the HREC (Tasmania) Network on (03) 6226 6254 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. Please quote ethics reference number HOO14885.

Appendix N has been removed for copyright or proprietary reasons.

Appendix N – SVPHS Organisational Conceptual Framework

Conceptual Framework for an Integrated Accountable and Sustainable Patient Centred Care Model

St Vincent's Private Hospital Sydney's Journey 2004-2015

Abstract

The provision of an accountable and sustainable healthcare system is a major challenge worldwide. The delivery of a Patient Centred Care model remains elusive for many organisations.

This Conceptual Framework may assist healthcare organisations in meeting the challenge of achieving an accountable and sustainable Patient Centred Care Model

Jose Aguilera OAM, RN, DNA, MNA, MCOM

Jose.Aguilera@SVHA.org.au

Appendix O – SVPHS Nursing Directorate Strategic Plan 2013-2016

NURSING & CLINICAL SERVICES DIRECTORATE BALANCED SCORECARD 2013–2016

Perspective Customer	Objective	Measures [KPIS]	F/Y 13-16 Targets	Initiatives	Responsibility
	Achieve a great Customer Experience	MRSA [hosp acquired]	<0.04%	• Introduced best practice guidelines	**BC**
PATIENTS	• Continue to improve quality & safety	Medications incidents	<0.16%	• Medication safety project	**IT**
		Falls	0.28%	• Falls management & prevention program	**IT**
		Pressure Injury	0.08%	• Introduced best practice guidelines	**EM**
	• Maintain & exceed patient experience	Press Ganey Pt Survey	90%	• Address gaps in patients PG survey	**NUMs**/ADNs
	• Provide a safe work environment	Lost Time Injuries [LTIs]	0.5/month	• Raise managers awareness & IMMEX	**NUMs**, ADNs
	• Achieve OHSIM Profile	OHSIM Profile Survey	70%	• Develop a program to reduce injury rate	**NUMs**
STAFF					
	• Maintain & exceed staff experience	Truly great place to work	70%	• Address gaps from BPA staff survey	**JA**, JB, RS
				• Best practice rostering project	**JA**, JB, RS
				• New graduate program	**AF**
VMOs					
	• Enhance VMO/Nurse partnerships	Press Ganey VMO			
	• Maintain & exceed VMO experience	Press Ganey VMO	65%	• Address gaps in patients PG survey	**JA**, JB, RS
	Achieve Operational Excellence				
INTERNAL PROCESS	• Maintain Magnet & excel in ACHS Equip national	Magnet Re-designation	2015	• Implement the revised 2013 Magnet Recognition Manual	**JA**, JB, RS, XJ
	• Maintain Magnet & excel in ACHS Equip national HR standards	ACHS Equip National & Magnet Re-designation	2015	• Implement the ACQSHC 10 Mandatory National Standards and the Equip National ACHS Program	**CR**, EM, NUMs
	• Enhance Patient Centred Care	% Pts pre-admitted	80%	• Address gaps in patients PG survey	**CR**, EM, NUMs
		% DOSA Pts	85%		
		% Pts Risk Assessed	100%		
		Nurses involve Pts	89%		
		Pt prepared for Discharge	85%		
	• Achieve ACHS HR criteria			• Develop an innovative staff reward, recognition and development program	**SC**, JA, JB, RS
	• Attract & retain qualified talented staff	RN vacancy rate	0 FTEs		
		Turnover rate	8%		
		Retention rate	92%	• Address gaps from BPA staff survey	**SC**, JA, JB, RS
	• Improve VMO documentation	Compliance with ACHS			
	• Enhance VMO communication	Press Ganey VMO survey			

NURSING & CLINICAL SERVICES DIRECTORATE BALANCED SCORECARD 2013–2016

Perspective	Objective	Measures [KPIS]	F/Y 13-16 Targets	Initiatives	Responsibility
LEARNING & GROWTH [PEOPLE]	**Being a great place to work** • Adopt an Evidence Based Practice [EBP] Model	EBP guidelines implemented	3	• Develop an action plan to implement EBP	**KW** , AF
	• Expand Practice Development & Research Units [PD&RUs]	PD&RUs established	5	• Implement strategies from the Practice Development & Research Council	**KW**, JT **JA**, JB, RS
	• Support staff engagement & commitment to the mission	Organisational Culture	Success	• Address gaps from BPA staff survey	**AF**, JA, KW
	• Develop leadership & management as well as innovative workforce models	% of middle managers with leadership training	80%	• Develop leadership learning & development programs	**SC**, JA, JB, RS
		% of RNs with tertiary qualification	85%	• Develop an innovative staff reward, recognition and development program	**SC**, JA, JB, RS
	• Gain a better understanding of VMOs business • Develop a better understanding of VMO's knowledge of SVPH internal processes and code of practice	Increase uptake of CNS & Magnet Professional Practice Program [MPPP]	5%	• Increase uptake of CNS & MPPP	**SC**, JA, JB, RS
FINANCIAL	**Grow our Mission & achieve our Vision** • Increase margin	EBITDA %	16%	• Implement revenue maximisation and cost containment strategies	**JA**, JB, RS
		Coding target	5 days	• Strengthen Health Information Service	**JA**, MW, AK
		IFC %	100%	• Enhance IFC procedures	**SM**, JA
	• Reduce LOS	ALOS	4.95	• Implement LOS reduction program	**JB**, JA
	• Increase targeted activity & targeted growth opportunities	% Overnight Occupancy	80%		
		Utilisation OR	85%		
		Utilisation DSU	75%	• Increase DSU surgical activity	**RS**, PW, JA, VW
		Utilisation CCL	60%	• Integration of CC Labs	**RS**, PW, JA
	• Reduce agency costs	% of total S&W	6%	• Build up the casual pool	**SC**, KH, JA, JB
	• Achieve WHPPD /WHPOM	WHPPD	11.3	• Closely monitor daily WHPPD / WHPOM	**JA**, NUMs, HR
	• Achieve cost/hr	Cost/Hr	$57	• Closely monitor SEPPD	**JA**, NUMs, HR
	• Improve VMO awareness of cost of care provision				

Appendix P – St Vincent's Health Australia (SVHA) Organisational Chart